FEBRUARY 15, 1958
VOL. 154—NO. 7

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

SCIENTISTS' AIDE

Mrs. Orton Newton of Pharsalia, N. Y., takes time out from her housework and helping run a 50-head dairy farm to look over equipment for three radio transmitters she controls for Bell Lab research men. See story on p. 64.

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● BEAUTIFUL...Extensions are easy to sell when you offer your subscribers telephones in color by Stromberg-Carlson. The clear-plastic finger wheel adds sparkle to the wide range of beautiful decorator shades. These instruments are available in the high-efficiency

"W" model, the type known to the industry as the "500" telephone. Get this extra revenue. Call or write the Stromberg-Carlson Sales Office in your area for technical details and colorful selling aids.

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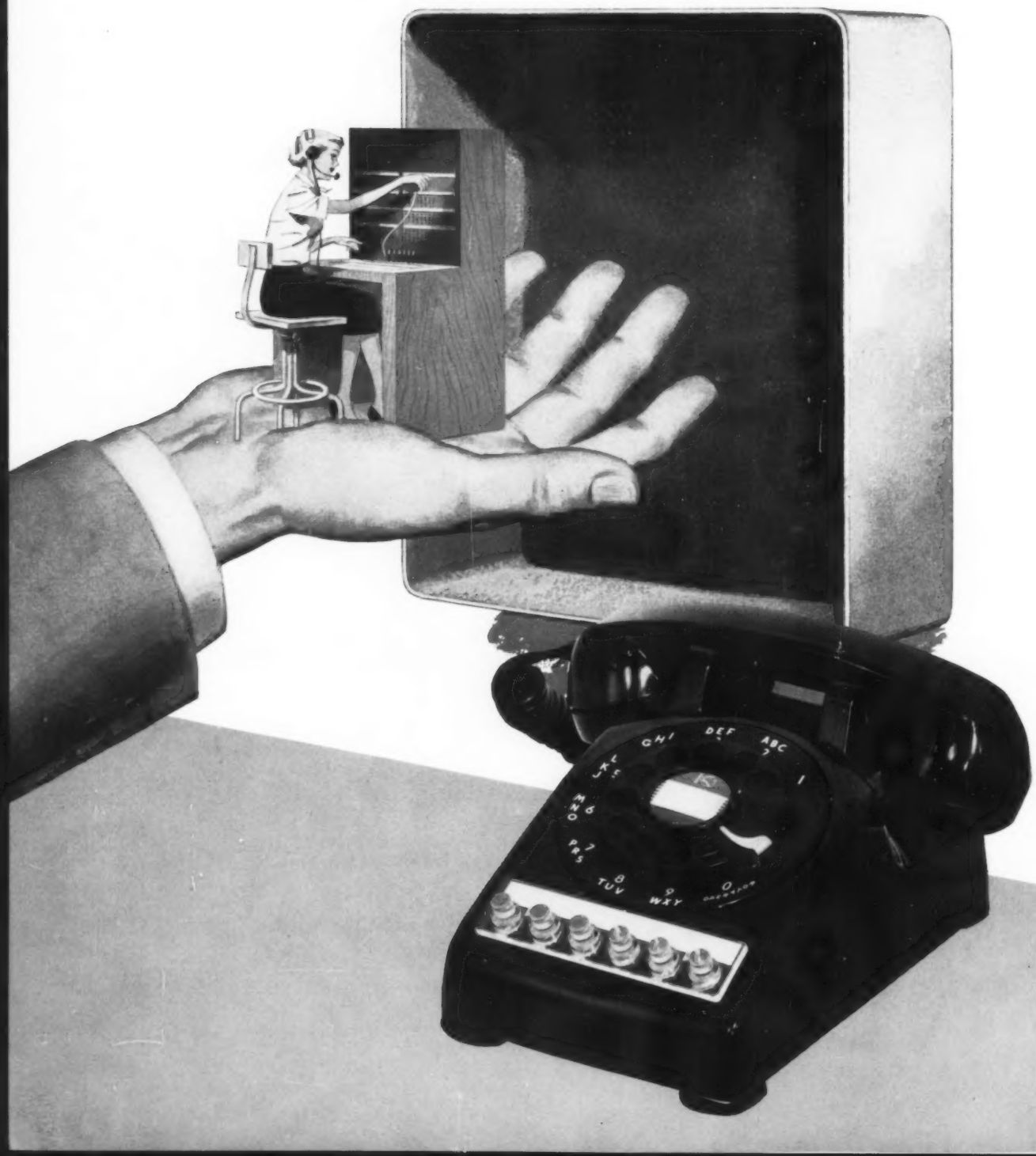
If we put a midget operator



in the control box –

If you put a midget operator in the control box of your key system you might be able to match the service you get from your K1A1 system. But you would have a busy midget. Here are a few of the things she would have to do, and do efficiently and tirelessly.

She would have to handle up to 4 incoming lines. The K1A1 selects as many as 4 central office or PBX lines.

She would have to give intercommunication service. The K1A1 permits you to select any one of eight other key phones simply by dialing one digit.

She would have to hold calls. With the K1A1 you can hold one call while talking on another line. This permits every key telephone user complete operational control.

She would have to flash the illuminated buttons. With the K1A1, buttons flash on incoming calls and burn steadily when the handset is lifted . . . this prevents accidental interference by other users.

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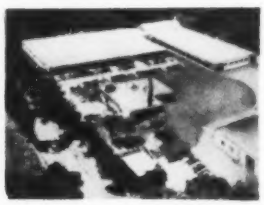

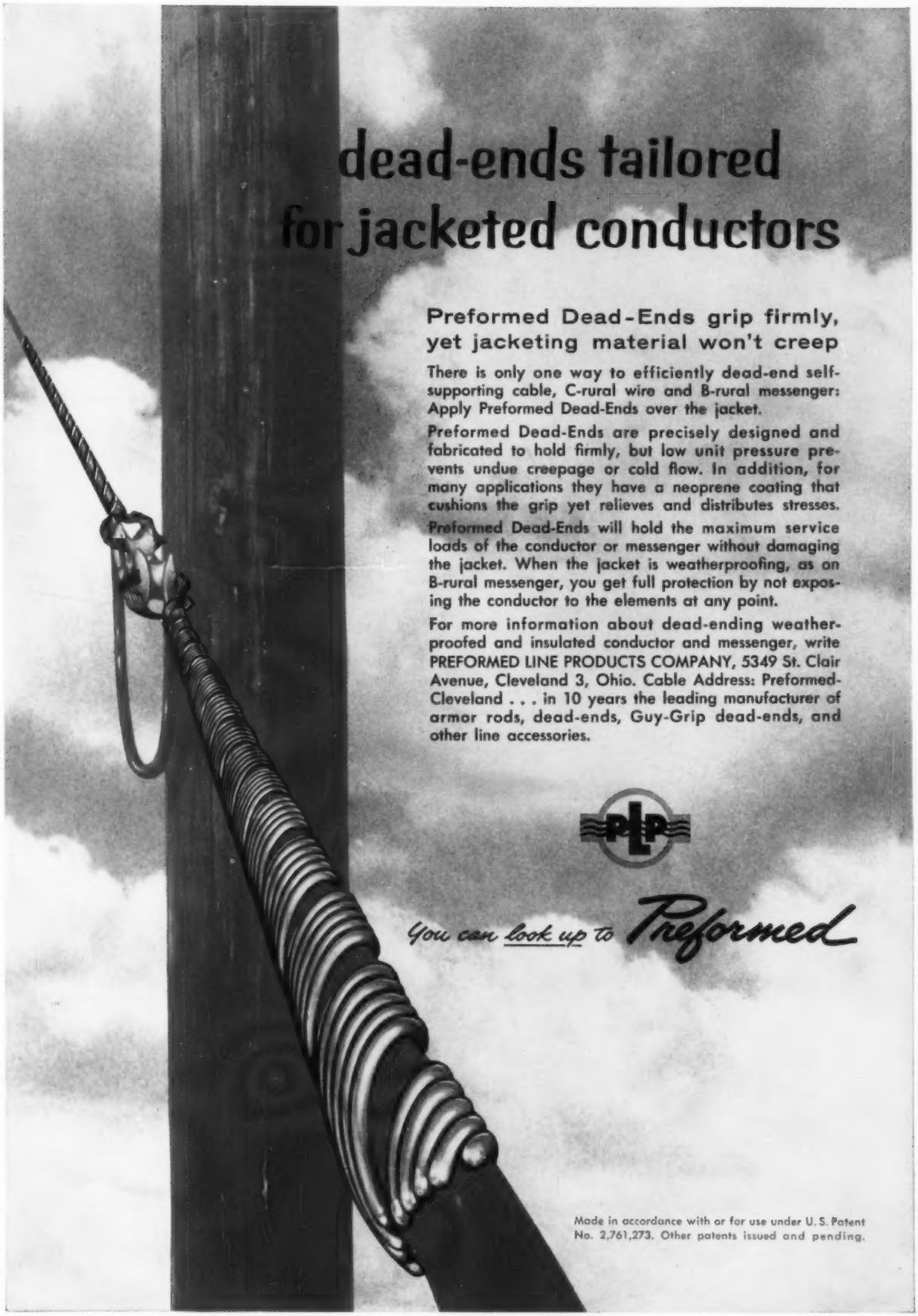
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There is only one way to efficiently dead-end self-supporting cable, C-rural wire and B-rural messenger: Apply Preformed Dead-Ends over the jacket.
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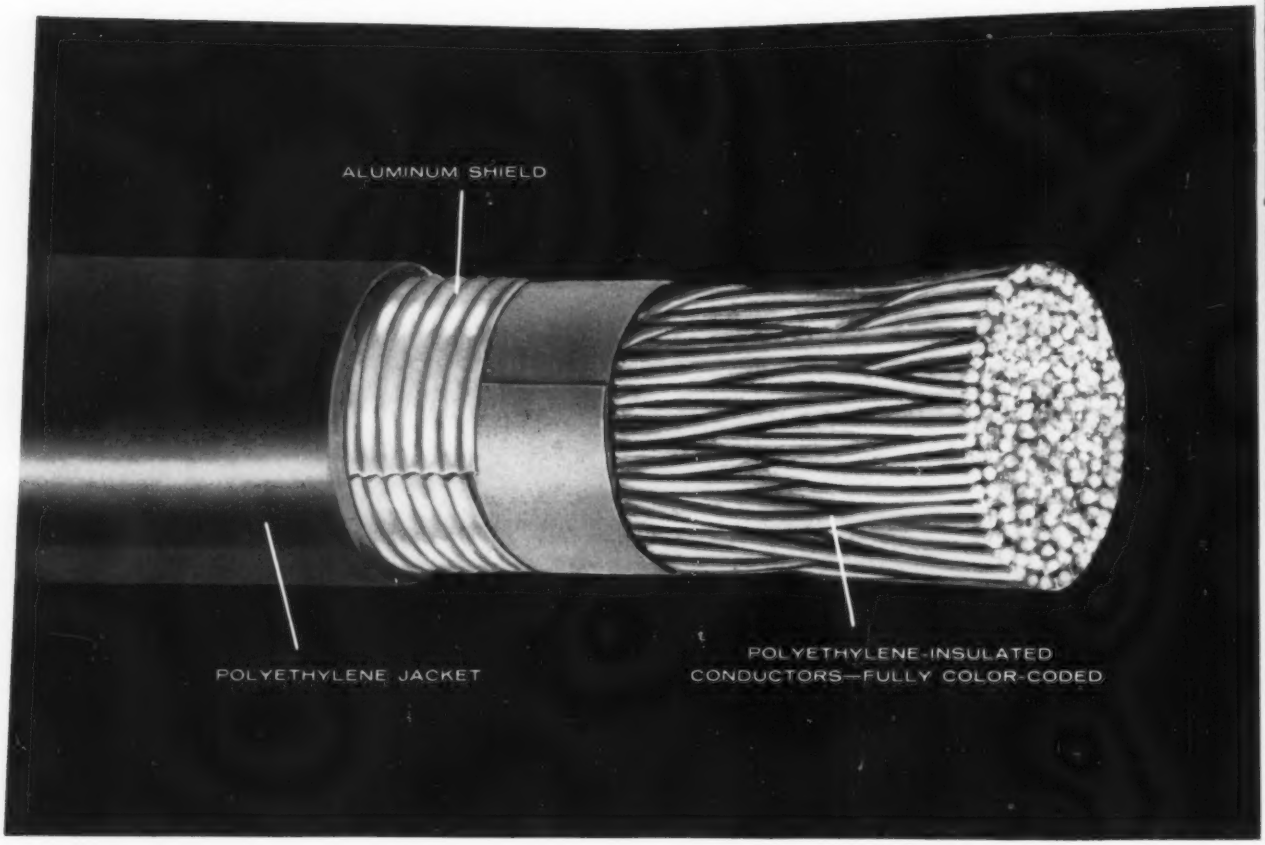

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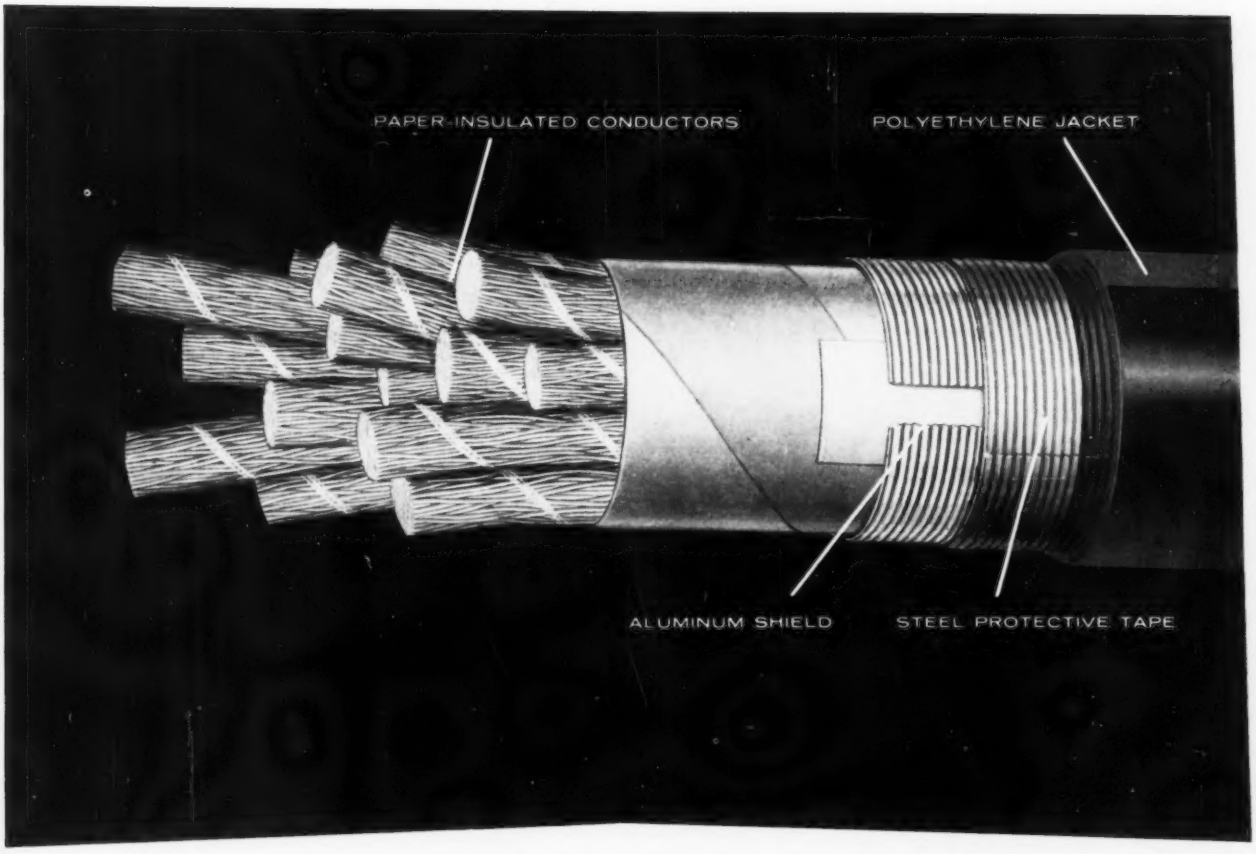

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FLASHES AND PLUGS

METHOD TO THEIR MADNESS. The Associated Press tells about radio station XEMH in Merida, Mexico which wanted to prove to advertisers it had a lot of listeners.

So the station played one record over and over, 59 times.

Telephone lines were soon jammed. The management said it received 523 calls of protest in four hours.

Experts reckoned that this sampling meant the station has 25,000 or more listeners.

•

NEEDS A DICTIONARY. Recently a Mount Vernon, N. Y., woman picked up her telephone and asked the operator for NEpperhan 0892.

"NEpperhan 0892 is obsolete," the operator informed her.

"Thank you," said the woman. "Will you please give me OBsolete 0892."

•

MISTAKEN SHORTCUT. Paystations figure in many cases of misunderstanding and abuse by the public.

One evening a New York commuter dropped a quarter into a pay slot and dialed the operator.

"Give me two dimes and a nickel, please," she said. "I'm in the subway and there's a big line at the change window."

The operator politely explained that toll telephones just weren't constructed to make change.

•

MAKE DO WITH WHAT'S AT HAND. Despite the magic of the modern multi-purpose telephone there are still some things for which it is not well adapted.

A few months back telephone repairmen investigated why a certain number always buzzed the busy signal.

They found a sweet old woman mending her husband's socks . . . and using her telephone to fill the sock!

•

DOUBLE TROUBLE. Terry Thomas, famed as the most loquacious teenager in her neighborhood, was burning up the wire one evening on the downstairs telephone—this much to the fuming irritation of her father.

Finally after listening to 15 minutes of nonsensical conversation between daughter and No. 1 girl friend, he broke in.

"Terry," he stormed, "I'd like to use the telephone. Why in heaven's name don't you use your private telephone, the one I got you for Christmas?"

Fixing her father with an incredulous and withering glance, Terry said, "Gee, Dad, don't be a square. Someone might call me on my telephone."

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Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY
Since 1901

February 15, 1958

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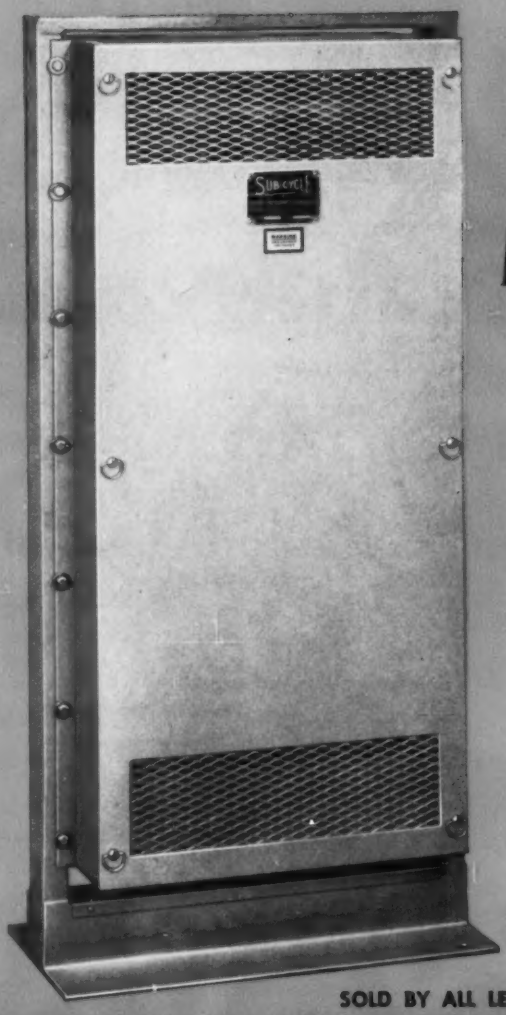

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The Model S-5 can be equipped to supply either 15 cycles or 20 cycles as the fifth frequency; if only four frequencies are required, the converter is designated as a Model S-4. A minimum of floor space, only 24-3/8" by 15", is required.

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PHILCO TLR-6 microwave provides economical transmission of NTSC compatible color or monochrome TV signals . . . plus full audio channel. Here is a completely modern microwave system . . . especially designed to meet the needs of community TV operators for thoroughly dependable operation.

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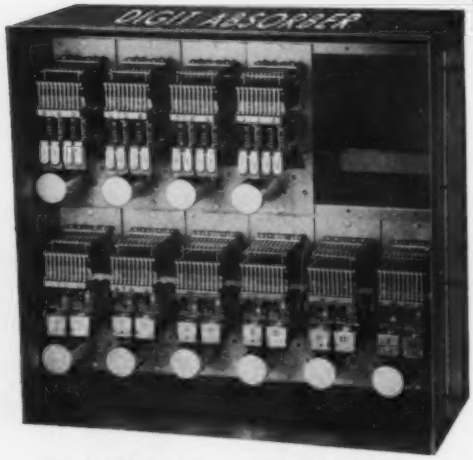
Can your Switchboard handle

2-5 DISTANT DIALING?



Typical Relay Case for Digit Absorber.

The Universal Digit Absorber employs simple circuity with a magnetic impulse counter, together with other standard relay apparatus of recognized manufacture.

Other UNIVERSAL Telephone Equipment:
Code-to-Selective RINGING CONVERTER
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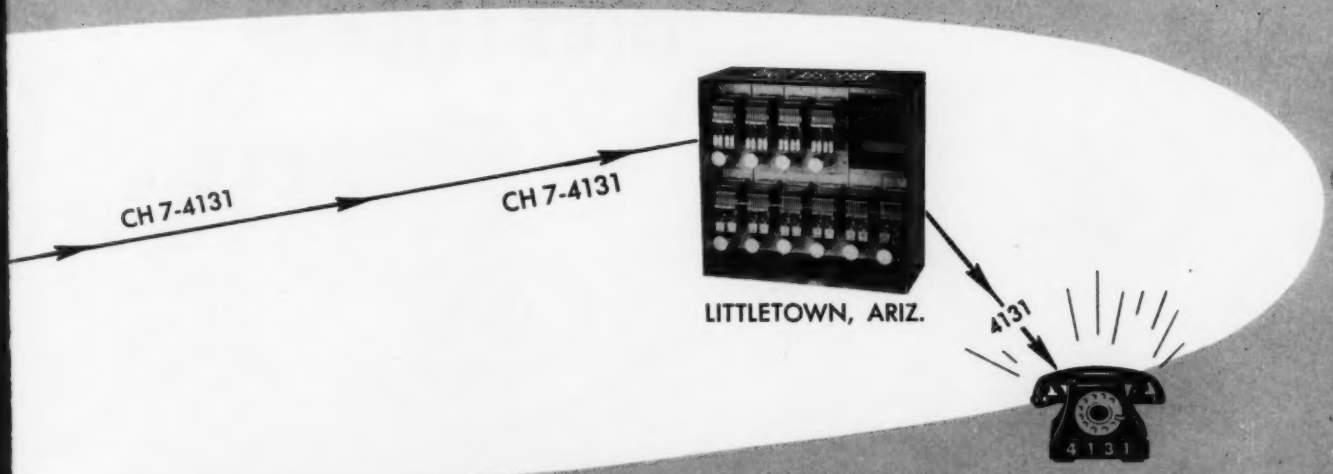
It can with a UNIVERSAL DIGIT ABSORBER*



DIRECT DISTANCE DIALING REQUIRES A 2-5 CODE

The nationwide dialing plans for operator and direct distance dialing require that all stations be recognized by a 2-5 code. Few dial switchboards of earlier design have provisions for adding digit absorbing features economically. The Universal Digit Absorber fills this need easily and at nominal cost. Installation requires very little time.

The ever-increasing requirements of Extended Scope Dialing on a universal numbering arrangement are easily handled by the Universal Digit Absorber. The Digit Absorber is a factory assembled, fully-wired, applique unit that can be added to any existing dial switchboard to pad in three digits of exchange code (ABX) or four digits in the case of a small digit dial unit.

There are two types of Universal Digit Absorbers, depending on the complexity of the exchange codes assigned:

*19-S unit will handle exchange codes, as illustrated by AB-X, where the "X" digit is not a duplicate of the "A" or "B" digit.

*19-L unit is required where the "X" digit is a repeat of either the "A" or "B" digit.

In addition, Universal offers a Trunk Digit Register unit which can be applied to "Trunk on Line" dial units where five or more digits are required to be delivered to a 3 or a 4 digit tributary exchange.

*Pat. Pend.

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Gentlemen: I am interested in your Universal Digit Absorber for 2-5 Numbering.

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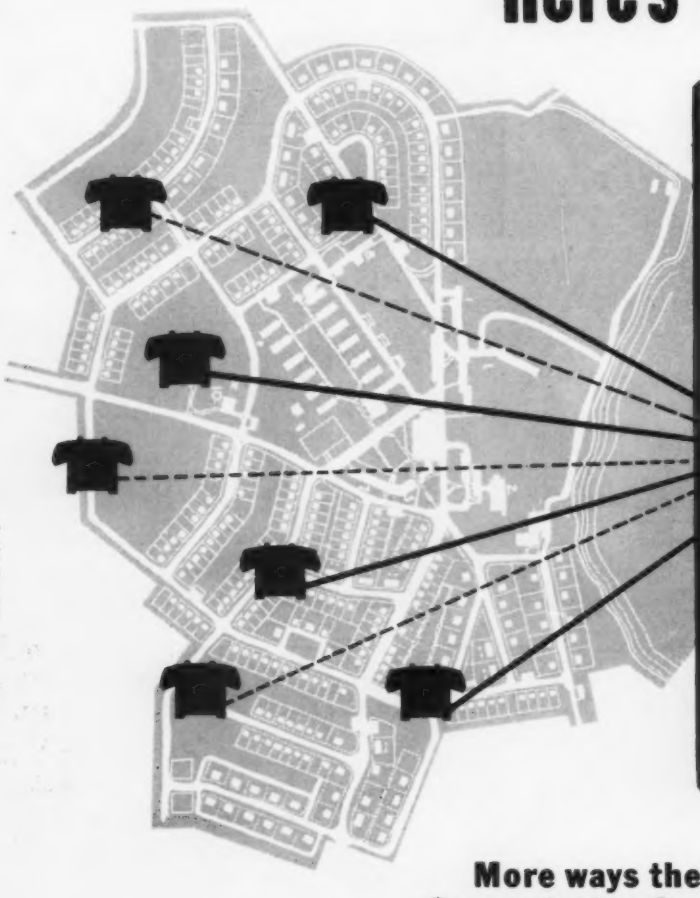

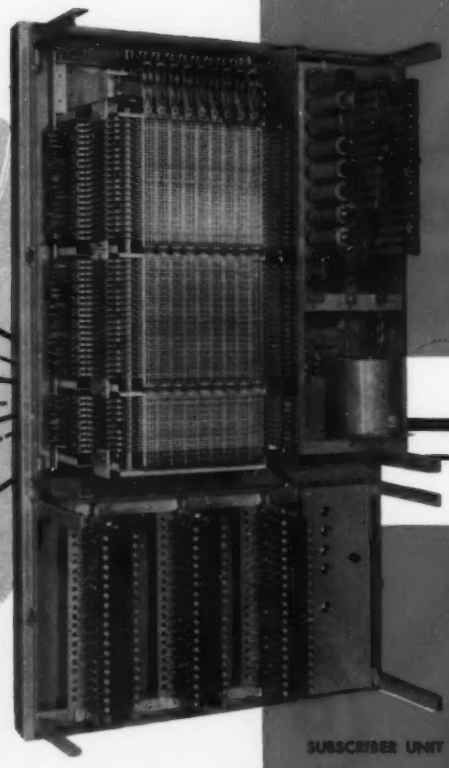

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More ways the Leich Line Concentrator Saves you money

- Permits upgrading service without additional outside plant investment.
- Eliminates the need for low usage subscriber lines between an area and the central office.
- Offers ringing and service facilities identical to those of directly connected central office lines.
- Avoids intercept and number changes in multi-office areas.
- Switches identified calls to answering services.
- Allows you to concentrate extended area service trunks (EAS) to a single route into a CDO dialing area.

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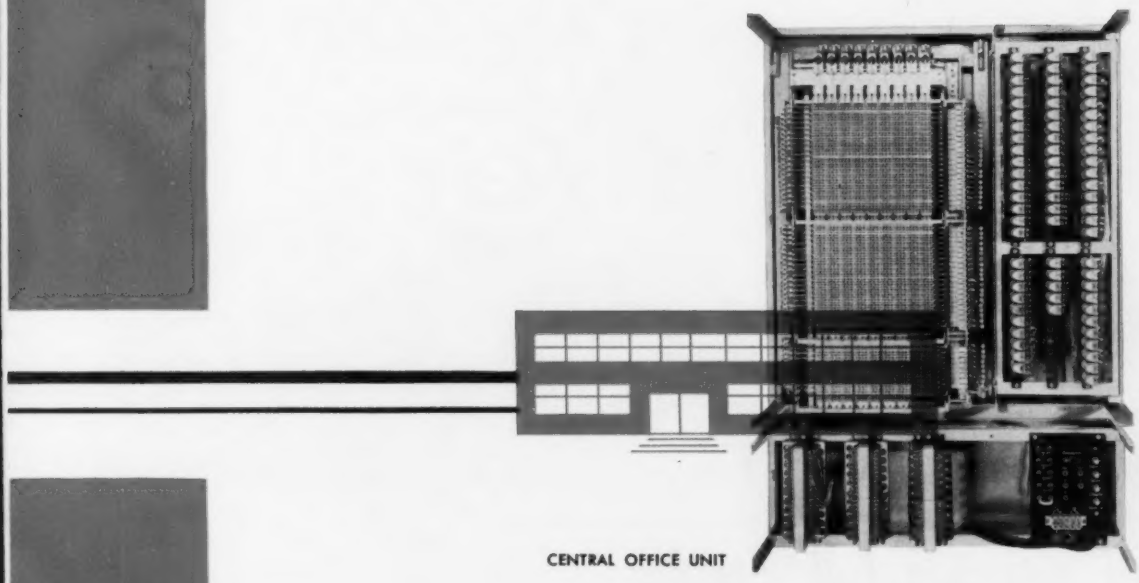

CENTRAL OFFICE UNIT

It Gives You More Telephones in an Area without The Expense of Installing All The Additional Lines from The Central Office.

Leich's new Line Concentrator is a money-saving miniature extension of the central office switchboard. It gives your telephone company more telephones in a rural or suburban area without the expense of installing all the additional lines from the central office.

What's more, the Leich Line Concentrator gives subscribers dependable service over a high efficiency trunk group. They can make calls within and outside their area as easily and quickly as with directly connected central office lines.

The installation consists of two units. One unit is installed at the central office. The other, the remote subscriber unit, can be installed in a small steel building, or mounted on a pole in a waterproof steel cabinet. These can be ordered separately when required. No power is required at the remote subscriber unit. No changes are necessary in the central office switchboard.

Two basic sizes of the Leich Line Concentrator will be available. The first, the 49-9-2A, is equipped with 49 lines, 9 traffic trunks, and two control trunks. It is approximately 39 5/8" high, 23 5/8" wide, and 9 7/8" deep. The second, the 49-18-3A, is equipped with 49 lines, 18 traffic trunks, and three control trunks. It is about 41 3/4" high, 26 7/16" wide, and 13" deep.

Other sizes will be partially equipped versions of these two basic units.

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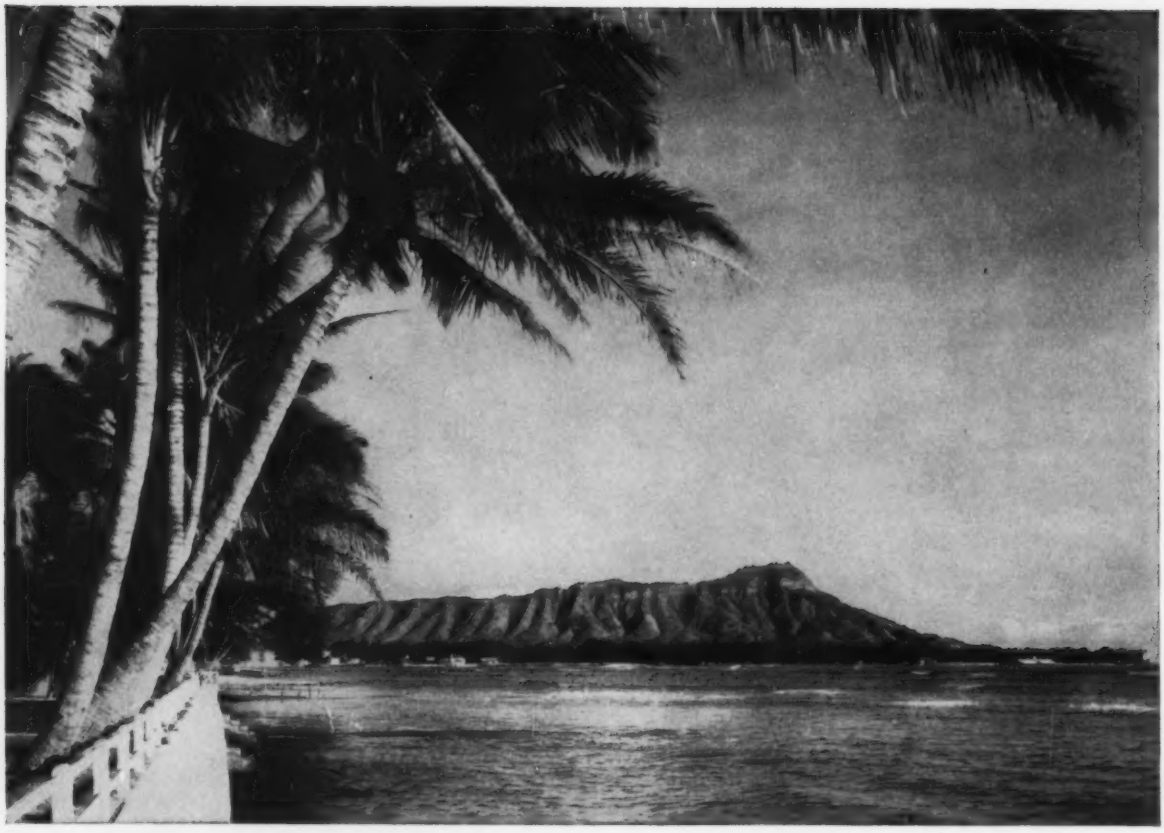

Hawaii expands toll circuits with LENKURT MICROWAVE

Breathtaking in its beauty, the geography of the Hawaiian Islands presents serious problems to telephone men. Lofty mountains make open wire and cable lines very costly to construct; swift ocean currents make it impractical to lay inter-island submarine cable. The answer? Lenkurt Microwave!

Lenkurt Microwave and Lenkurt Carrier now provide toll channels between Honolulu and all the islands of the Hawaiian group. Most of these channels are included in the Hawaiian operator toll dialing network.

Here's why the Hawaiian Telephone Company chose Lenkurt Microwave: (1) It is engineered by telephone men to telephone performance standards. Gives reliable, toll quality service. (2) It is quick to install, easy to maintain. No day-by-day realignment. (3) It is available in a range of low frequencies for the most difficult over-water applications, and in a range of higher frequencies for other applications. (4) Standard transmission levels, standard signaling, and 2/4 wire terminations make it easier to integrate into existing telephone operations. (5) It provides the maximum number of channels in its allotted spectrum. Allows plenty of room for economical expansion.

For additional information, write or phone today for two informative new booklets: (1) *What Microwave Means to Telephone Companies*, and (2) *Lenkurt Microtel Radio System*. Automatic Electric Sales Corporation, Northlake, Illinois. Fillmore 5-7111. In Canada, Automatic Electric Sales (Canada) Ltd., 185 Bartley Drive, Toronto. *Offices in principal cities.*

AUTOMATIC ELECTRIC

A member of the General Telephone System—One of America's great communications systems

GENERAL SYSTEM

IN THE NATION'S CAPITAL

BY FRANCIS X. WELCH, WASHINGTON EDITOR

House sub-committee probe into regulatory commissions holds little promise of improving their operation because of partisan overtones developed in the hearings. Welch's piece on "bumblery" draws many calls and letters from readers. . . . Discussed in prehearing conference of gas utility attorneys.

AS PREDICTED in this department months ago, the House Sub-committee on Legislative Oversight is running an investigation which seems to be degenerating into a rowdy free-for-all. Five FCC members, with special emphasis on Chairman Doerfer, have admitted acceptance of various items of traveling expenses, fees, and honorariums in connection with speaking engagements or appearances at radio industry meetings. The only two simon-pure members, according to Sub-committee Investigator Schwartz's tally, appeared to be the two very new members of the commission—Craven and Ford.

Chairman Doerfer rationalized his acceptance of these payments by pointing out that the government per diem allowance would hardly take care of more than a fraction of actual expenses of a commissioner obliged to put up at the plush hotels in which these conventions are customarily held. Nor would we expect our commissioners to sit up all night in a day coach, traveling to and from the Nation's Capital.

There is a real point here, in the commissioners' defense, of what has become a fairly accepted form of taking gratuities, fees, or expense money. To deny these commissioners or regulatory staff members any access whatever to unofficial financial supplement would be a real hardship. They would be confronted with the choice of either paying such traveling expenses out of their own pockets, to a large extent, or digging in and shutting up like clams in their Washington offices.

The former alternative would tend to confine regulatory appointments to wealthy men or those of independent means. To shut the commissioners up entirely might be a disservice to the work of the regulatory commissions. After all, commissioners have a right, if not a duty, to explain and defend the government's regulatory policies and positions in a way which the regulated industries can understand. Industry conventions and meetings present an ideal opportunity to use the best forum possible for the exposition of such views. It might even be said that a commissioner who failed to speak up on behalf of his commission, when such an opportunity presented itself, either lacked proper imagination for the job, or felt very little pride or responsibility in connection with his work.

But when all that is said, the present irregular system of grabbing checks from whatever source available, points to a need of some better understanding all around. The sub-committee, headed by Representative Moulder (D., Mo.), however, has generated such a boiling controversy, with such strong partisan overtones, that it is doubtful if we can expect any really constructive reform from that source.

For example, while the sub-committee was subjecting Chairman Doerfer to a gruelling cross-examination about checks running into $200 and $300, Representative Hoffman (R., Mich.) threw a dead cat squarely at the distinguished chairman of the sub-committee, Representative Moulder. Scored a hit, too. It seems (*Congressional Record*, Feb. 3, 1958, on page 1348) that Representative Moulder had a teenage daughter on his payroll as a congressional secretary while she was in Missouri going to high school. Altogether this remarkably astute young lady, who went on the government's payroll at the age of 15, got the tidy sum of $12,132.22 in government salary, during the period between July 1, 1952, through December 31, 1955. She never missed a bit of school, either. Representative Moulder said "she worked and earned her salary," and added that his political opposition was trying to "smear" the sub-committee's investigation.

Just what conclusion or moral can be drawn from this exchange of political amenities is debatable, unless it would suggest that Chairman Doerfer is getting too old to get into the real money.

But to get back to the constructive work of the sub-committee, if any. The members appear on the point of investigating each other more scrupulously than the regulatory commissions. The sub-committee's counsel, Dr. Schwartz, seems to be making like "Mr. District Attorney." When he was charged with this, by a Republican committee member, Dr. Schwartz said that his line of questioning was directed toward the exposure of any possible deficiency of integrity on the part of the regulatory commissioners. The other side's answer to that was that the law gives that prerogative to the President, in making the appointments to the regulatory commissions, and to the Senate in confirming them. The implication is that the sub-committee should confine itself to matters leading to constructive legislation, if necessary, governing the work of the regulatory commission.

But, it is difficult to see how anything constructive can come out of the bickering and quarrelsome atmosphere which has been created since the Moulder sub-committee got started off on this line of investigation.

Do Commissions Need Reform?

Aside from the cat-calling sessions

of the Moulder sub-committee, there are some things which Congress could do, or at least consider doing, in connection with the operation of the regulatory commissions. Perhaps some future congressional committee, during a non-election year, will get around to this work without descending to the headline hunting pitch of the Moulder group. A very thoughtful editorial in the Washington (D. C.) *Post* of Jan. 30 suggested several points, which might be explored in helping the FCC, in particular, to operate more effectively.

First, it has been proposed that the terms of the commissioners might be extended from seven to nine or 10 years. This would tend to reduce the pressure on FCC members from either the White House or Congress, and leave them freer and more secure in their tenure to attend to their proper business. It seems to be pretty generally agreed among disinterested observers that the extent to which FCC members are under pressure results more often from the activities of congressmen than from those of the executive offices.

Obviously, when an FCC member is approaching the end of his seven-year term, he might think twice about responding to a suggestion from a congressman that a certain application for a radio station license ought to be speeded up, or delayed, or otherwise handled. This is not to say that these commissioners would be swayed in their final judgment on the merits of an application. But, on such minor details as procedure (which can be very important in the course of a given case), a hard-pressed commissioner might be constrained to give the congressman's constituent a sympathetic break.

Another suggestion was to give the commissioners a more generous expense allowance, along with suitable safeguards as to reporting and auditing the same. There also would be a limitation on acceptance of gratuities from any other source.

A third and more debatable suggestion was to enlarge the commission to nine members so that its work load could be broken up and handled by different panels. There is the contrary argument, here, that the old division system was tried years ago by the FCC and it did not work very well. Readers may recall that about 15 years ago there were three separate divisions of the FCC, one of which handled telephone-telegraph matters exclusively. But, maybe the system could be considered again, in the interest of stepping up the pace of production within the FCC. At present, this pace is dragging shamefully, due to nobody's fault in particular. The whole case load situation seems to need some kind of overhauling or reorganization. An industrial efficiency expert could probably look over the FCC shop and tell what was wrong in a few weeks.

Fourth, the commission and its examiners ought to have the advice of counsel and of each other. Former objections to the mixture of case prosecution and decisions seems to have resulted in procedural isolation within the FCC, which has been carried to the extreme.

The Washington *Post* editorial went on to suggest several other ideas, such as the commissioners getting together on a voluntary code of ethics and writing their own opinions. These are at least debatable points worthy of consideration, if not adoption. The present FCC practice of confining the opinion writing to a special staff division seems, to this observer, to be rather inflexible, clumsy, and unrealistic. An appellate court could not function that way for a single term without either getting its case work bawled up into utter confusion, or driving the justices to open revolt.

One difficulty in the operation of the FCC, which seems to be pretty generally overlooked, is the dissimilar variety of its responsibilities. There are other federal regulatory commissions which have different duties under different statutes, and they manage them fairly well. The Securities and Exchange Commission, for example, administers seven statutes. And the Federal Power Commission has some responsibility for odds and ends under at least eight statutes—its main work being under the Federal Power Act and the Natural Gas Act.

But, the troubles of the FCC seem to stem not so much from a variety of statutory responsibility as from a mixture of duties, many of which are not regulatory at all, in the usual sense. The monitoring of radio frequencies, the administration of various safety and engineering standards are all dedetails of technical administration which do not involve regulatory decisions at the policy level. If they could be wrapped up in one or more packages and placed under a ministerial official, the commission would be left with more time and energy to operate in the manner of a real regulatory commission, intead of the proverbial one-armed paper-hanger.

The FCC is not unique in this difficulty. The Civil Aeronautics Board had the same trouble, before its duties of administering and operating airports were divorced from its regulatory functions regarding the air lines. A parallel problem had to be whipped by the old Maritime Commission. But, such dull, routine problems are not likely to get much attention these days, in competition with the political fireworks now going on in Washington. They will have to await a calmer day and perhaps some broader minds.

Echoes of "Bumblery"

Your correspondent wishes to acknowledge the many calls and letters from readers in connection with the article about "bumblery" (TELEPHONY, Jan. 18). One writer, a lady on the Interstate Commerce Commission staff, raises a point which certainly deserves an answer or explanation. She wants to know just what the word means and what is its source.

For others who may have wondered about this, there *is* such a word (in verb and noun form) in any fairly large dictionary. "Bumble" is variously defined as a droning, buzzing, humming, monotonous and apparently meaningless noise, such as made by a bumble bee. But this writer prefers another source—the unforgettable character in Charles Dickens' delightful novel *Oliver Twist*. Many of us will recall our own fascinated reading about the memorable Mr. Bumble, the pompous church beadle. If Mr. Bumble were remembered for nothing else, it would be for his profound and deathless observation that "the law is an ass!" Your correspondent has often reflected on the truth of that remark. He hopes he will not be disbarred or charged with *lese majeste* if he confesses that the last time he thought of Mr. Bumble's pithy comment was while reading a unanimous decision of the United States Supreme Court.

Most of the letters received (surprisingly there were no dissents) expressed agreement or parallel personal grudges on the subject of "bumblery." The last two words "finalize" and "implement" seem to lead all others in this unpopularity contest. An engineering gentleman from the Federal Trade Commission seeks aid in stamping out the uselessly redundant phrase: "Ordered, adjudged, and decreed," which lawyers seem to plaster on their pleadings automatically. Several readers wondered if something cannot be done about such legalisms as "hereinafter" or "aforementioned." A young lady at the FCC wishes the word "obfuscate" could be exterminated, somehow. One could go on and on.

An amusing argument over this article broke out (so I am told), of all places, at a recent pre-hearing conference of gas utility attorneys. One dis-

(Please turn to page 48)

NEW DEVELOPMENTS

in Independent Telephony

By RAY BLAIN

THIS is the third article in a series of four, in which our technical editorial director describes various new items of equipment of interest to all progressive Independent telephone companies. The first two articles appeared in the Feb. 1 and Feb. 8 issues. Readers desiring more information on any of the products described may write to Mr. Blain in care of TELEPHONY.

Plastic Cable for Direct Burial (Fig. 26). The construction of this cable is similar to plastic exchange cable with the addition of a double layer of heavy gauge aluminum armor applied spirally over the polyethylene belt. A sheath of black weather-resistant polyethylene is applied over the armor. This cable is also available in all commonly used gauges and sizes.

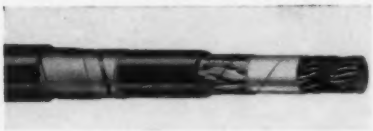

Fig. 26. Plastic cable for direct burial.

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Underground Service Wire (Fig. 27). This wire is designed for direct burial from the pole to a subscriber's premises. It is made up of four No. 20, AWG 40 per cent conductivity, copper-covered steel, polyethylene-insulated, color-coded, quadded, inner jacket polyvinyl chloride conductors. It also has an aluminum shield and a black polyvinyl chloride jacket. This wire is shipped on non-returnable reels.

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Armored Wire for Direct Burial (Fig. 28). This armored wire was designed and built for direct burial without supplementary protection. It is now available in either polyethylene-insulated, polyethylene-jacketed or rubber-insulated neoprene jacketed. Both types are one-pair parallel No. 16 AWG soft copper conductors protected with a served armor of flat steel wires. This armored wire withstands the abrasive action of cinders and certain types of soils, and also of moisture and other destructive underground forces. It proves particularly effective in areas infested with rodents and termites. This wire is shipped on non-returnable reels.

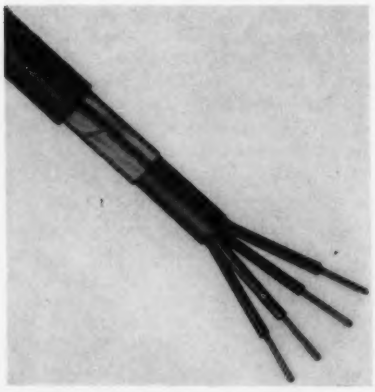

Fig. 27. Underground service wire.

Fig. 28. Armored wire for direct burial.

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Plastic Jacketed Station Wire (Fig. 29). This wire is recommended for use in all types of building ducts. It is also designed for installation with stapling guns. It is available in two, three and four parallel soft copper, free stripping, color-coded, polyethylene-insulated conductors. It has an over-all plastic jacket. This wire is packed in 500 foot coils in individual knockout reship cartons. These individual cartons are packed in master cartons of 1,500 or 2,000 feet. The outer jacket of the wire may be furnished in either brown, ivory or beige.

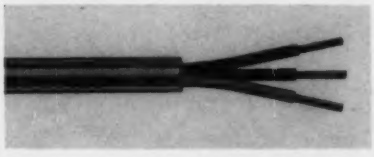

Fig. 29. Plastic jacketed station wire.

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Color-Coded Plastic Switchboard Cable (Fig. 30). One cable manufacturer has now standardized on a new plastic-insulated and jacketed switchboard cable. This cable is fully color-coded for quick conductor identification. All colored stripes are extruded directly into the insulation and form a permanent part of the insulation wall. The insulation compound is an especially developed tough material having very high compression and moisture resistance. A free stripping, tough PVC jacket is applied over-all to protect the core of the cable. A nylon rip cord is inserted under the jacket to aid in the jacket removal.

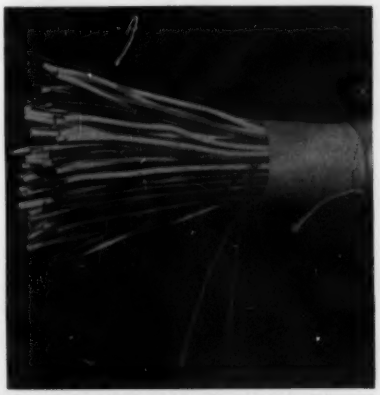

Fig. 30. Color-coded plastic switchboard cable.

Aluminum Sheath Telephone Cable. One manufacturer in this country has started production of aluminum sheathed telephone cable. This sheathing material is applied by an exclusive extrusion press designed and built specifically to do the job. The use of aluminum provides tougher impervious sheath with resultant lighter weight cables. The exclusive extrusion process used does not impose length limitations as required by other methods of aluminum sheathing. We are informed that aluminum sheathed cables have not presented any undue installation or splicing problems.

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Terminal Loading Coil Cases (Fig. 31). Cable loading today has been standardized almost 100 per cent. Using 88 millihenry inductance coils (Type 632) spaced 6,000 feet apart (H type spacing) is known as H-88

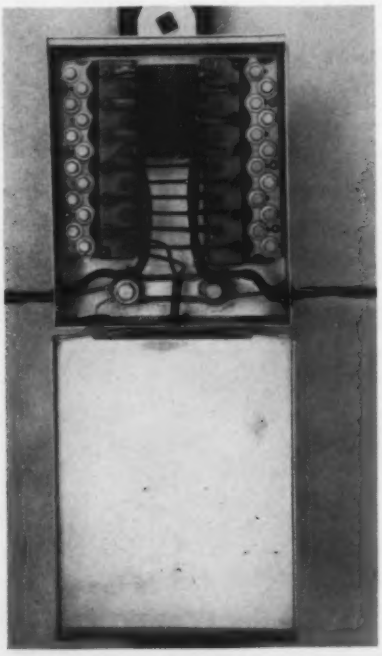

Fig. 31. Terminal loading coil cases.

loading. With the standard telephone cable having a capacity of approximately .08—.09 MF per mile, the transmission frequency characteristics are suitable for the best commercial telephone use. With the new "500 type" telephone, this provides the best possible grade of service.

Both paper and plastic insulated cable in all sizes meet the capacity requirements for H type loading and, therefore, a composite circuit made up of conductors of this size will be uniformly good with respect to transmission frequency characteristics. Likewise, rural distribution wire also has

Fig. 33. Preformed drop wire dead-end.

electrical characteristics which match the cable. While it is true that the characteristics of rural distribution wire change slightly with moisture, it is generally agreed that the change is not enough to seriously interfere with good transmission. Therefore, it is not believed that the spacing of load coils on rural distribution should differ from the spacing used on cable.

The method of loading, in general, is as follows: Start from the central office and measure along the cable route 3,000 feet and place the first loading point. Measure 6,000 feet from the first loading point and place the second. Continue on to the end of the cable.

A terminal loading case suitable for use on 6, 11 and 16-pair rural distribution wire is shown in *Fig. 31.* This cast aluminum terminal box and housing for loading coils is available in eight different types. Terminals are available with or without protectors and designed to accommodate loading coils of 88 MH or 44 MH.

•

High-Performance Guy Strand (Fig. 32). This new "high-performance" strand, called Copperweld Type M, sells at a lower price but retains all the high performance characteristics of the former product. Similar to all Copperweld strand, the Type M utilizes wires having a heavy copper sheath inseparably molten-welded to an alloy steel core.

Type M strand is currently offered in seven strengths: Three-wire strand in strengths of 2,200 and 4,000 pounds; seven-wire strand in strengths of 6,000, 8,000, 10,000, 12,500 and 16,000 pounds.

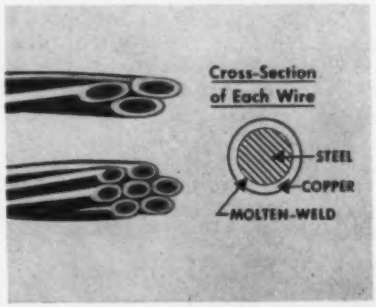

Fig. 32. High-performance guy strand.

Each strength is pliable and easy to handle. It can be readily bent, served, moused or clamped, and the molten-weld gives full assurance that the copper covering will not crack, flake or peel, the company states.

This strand is put up in coils of 250, 500, and 1,000 feet, depending on the size. Reels of 2,500 5,000 and 10,000 feet are also available.

•

Preformed Drop Wire Dead-End (Fig. 33). This dead-end is made of stainless steel rods, helically formed.

Fig. 34. Preformed dead-end for rural distribution wire.

The rods are neoprene-covered to help cushion the gripping action, and to facilitate removal of the dead-end.

Due to the long contact area, there are no concentrated stresses which would cause the conductors to short-circuit. There is also no possibility of abraiding the insulation. The stainless steel construction practically eliminates the problem of bail failures, the manufacturer reports. The dead-end is designed to hold the rated strength of the conductor either under sustained or static load conditions.

•

Preformed Dead-End for Rural Distribution Wire (Fig 34). This dead-end is designed to hold between 500 and 700 pounds load. The dead-end is applied over the conductors as shown in *Fig. 34.* Tools are not required for installation and the device is reusable many times. The dead-end is made of aluminum alloy rods, covered with neoprene to cushion the grip, and to make it easy to remove.

•

Support for "C" Rural Wire (Fig. 35). This preformed Tangent support is designed for use with "C" rural wire on crossarms. This support is made of stainless steel rods formed so that they will grip the parallel type wire snugly.

To install the rods are fastened to the top of the crossarm, then the individual legs are bent around the pole, and applied to the wire. This application eliminates drilling holes through the crossarm or driving bolts or screw eyes.

•

Telephone Terminal for Overfloor Duct (Fig. 36). The base of this connecting block fitting for telephone installation is made from .040 inch steel, galvanized, with edge turned up to prevent the seepage of water into the fitting. On each end of the base there are tongues for 1500 and 2600 Pancake moulding. It is also possible to extend these overfloor ducts from each side.

The terminal plate is made from .040 inch steel, neoprene coated to eliminate possible crosstalk. This plate is provided with keyhole slots for easy fastening to the base. The terminal plate is pierced and tapped for the mounting of the 44A type terminal block.

Fig. 36. Telephone terminal for overfloor duct.

Fig. 35. Support for "C" rural wire.

Plastic Conduit Couplings (Fig. 37). This plastic coupling, developed especially for telephone service, makes it possible to install Transite conduit at greatly reduced cost. The following advantages are claimed for this coupling:

(1) No separation between ducts.
(2) One backfill instead of several.
(3) Narrower, shallower trench.
(4) Faster installation.
(5) Watertight, silt-tight joints.
(6) No joint sealer.

Furthermore, the tight joints formed by this plastic coupling make possible the use of pneumatic rodding. It also eliminates the need of duct cleaning.

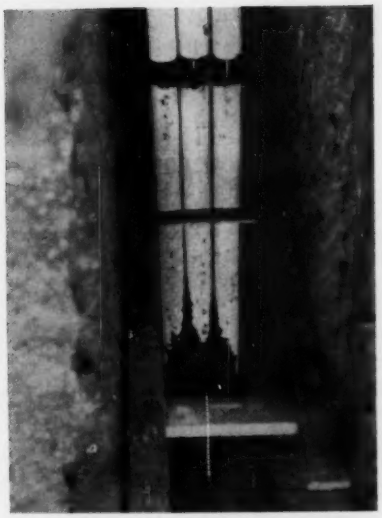

Fig. 37. Plastic conduit couplings.

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Zipper tubing Cable Protection (Fig. 38). This revolutionary new zipper style plastic tubing is used to inclose, protect and identify multi-conductor wiring used in electronic, communication and electrical industries. The ease with which wiring can be encased will reduce the normal time spent on wire harnessing and cable covering. With Zipper tubing, a secure jacket can be applied in seconds and prevent abrasive wear, or it may be used as a substitute for lacing and tying cable forms.

Fig. 38. Zipper tubing cable protection.

Zipper tubing is available in nine colors, including black and clear plastic. It can be obtained in continuous lengths from 20 to 300 feet. When closed, it will withstand a linear strength test of 45 pounds per inch and is available from one-half to 4½ inches

wide. Additional strength may be provided if required.

Zipper tubing is fabricated from polyvinyl-chloride plastic. Pure metal foil may be laminated to the inner surface of the tube for shielding. Both high and low frequencies are shielded up to six gausses with attenuation result up to 1200; 1 at 250 MC. The overlap construction gives coverage protection. The metal zipper slider is detachable. The tubing may be unzipped and reused except when it is permanently sealed with ZT sealer.

•

Improved Electrical Tape. A new electrical tape offers operating temperature ranges from a new high of +85 degrees to a new low of —55 degrees C. According to the manufacturer, this new tape never gets brittle, applies easily, even under extremely low temperatures, without stiffening or shattering; it fuses into a homogeneous, water-tight seal.

The manufacturer lists these advantages for the new tape: Virtually non-absorbent, self bonding, fuses into a solid mass, conforms to the most complex shapes, high dielectric strength, long storage life. It is recommended for communication and power transmission wire and cable splicing, moisture-proofing bi-metal connections, sealing corrosion-resistant conduit couplings and insulating high frequency electronic circuits.

•

Trailer Conversion Kit (Fig. 39). This trailer conversion kit can be used to modernize old-style cable reel trailer at a small cost. Old trailers can be converted to provide almost effortless cable reel handling. With this kit installed, the dangerous and difficult practice of tilting the trailer to load or unload reels is unnecessary.

To use the converted trailer, place the spindle through the cable reel and attach link arms on either side. The reel is now ready for loading. The two link arms are connected to the winch line through a harness-type arrangement. Powered by the truck winch, heavy reels glide effortlessly up two guide rails into a saddle-type travel rest. Locking pins are dropped in on either side of the reel to prevent its moving. To unload a reel, the locking pins are removed and the winch permits the reel to glide down the guide rails to ground rest. Less than two minutes are required to load or unload reels up to 90 inches in diameter and weighing as much as 5,000 pounds, with this converted trailer, the manufacturer states.

Kits are available for converting PWD, PCB, W-PCP, or any similar model trailer.

•

Hydraulic Digger (Fig. 40). This newly-engineered hydraulic digger is particularly designed to satisfy the modern trend towards attaching earth-boring equipment directly to a derrick.

Fig. 40. Hydraulic digger.

A top-mounted hydraulic motor-drive makes attaching to and storage with the derrick easy. This elimination of the side-mounted hydraulic motor increases the angular degree within which the digger can be operated freely.

Safety and longer digger and truck equipment life is built into the digger because hydraulic fluid by-passes do not permit its operation in excess of the truck limits. Pole holes from 8 inches to 24 inches and up to 8 feet in depth can be quickly bored. Single lever operation permits instantaneous reversal in direction of the digger. Quick forward and reverse movements of the auger shake excavated dirt free and in the clear around the hole.

The hydraulic digger is available for use on almost any popular model derrick-equipped truck.

•

Hydraulic Earth Boring Machine (Fig. 41). This is a pressure-feed hydraulic digger with finger-tip remote hydraulic controls. It digs rapidly in every type of soil including frost and hard pan. The swivel-mounted digger pivots to dig anchor holes. The digger is operated in a convenient standing position from the rear of the truck. The suspended-type digger has a "reaching" capacity for hard-to-get-at areas. This unit can be retracted and laid flush on the roof of the truck. With the digger in position, the derrick is free for pole-setting operation. It digs holes 11 to 22 inches in diameter, and up to 7 feet deep at any angle up to 90 degrees, all hydraulically.

Fig. 41. Hydraulic earth boring machine.

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Skid-mounted Earth Boring Machine (Fig. 42). The skid-mounted digger is secured to the truck platform by U-bolts that extend through the platform and around the truck frame. Lifting eyes are provided. With the use of a lift, the entire unit can be quickly mounted or dismounted from the truck platform.

The digger can be quickly mounted on any type or make of truck having sufficient capacity to carry its weight. It can be equipped with integral winch and derrick with a rated capacity of 4,500 pounds. It can be adjusted to dig at many angles regardless of the position of the truck.

(Please turn to page 62)

Fig. 39. Trailer conversion kit.

State Secretaries Discuss Repeal of Telephone Excise Taxes

A "WORKSHOP" meeting brought representatives of 14 state telephone associations and the United States Independent Telephone Association together at the Jung Hotel in New Orleans on Jan. 7 and 8 for the purpose of discussing problems confronting the telephone industry, particularly the state associations.

The New Orleans gathering was the ninth in a series of such workshops. The plan actually had its introduction in 1952 when William F. Miller, secretary of the Iowa Independent Telephone Association and Lloyd C. Wright, then secretary of the Ohio Independent Telephone Association, surveyed other associations' officers to ascertain if an occasional meeting of secretaries would serve as a means of exchanging ideas so that the state executives could better serve their memberships.

The survey indicated approval of the plan and the first meeting was scheduled at the Edgewater Beach Hotel in Chicago in December, 1952. Since then the secretaries have met in conjunction with the USITA Spring Conferences in Chicago in 1953, Colorado Springs in 1954, and Bellair, Fla. in 1955 and the annual October USITA conventions in Chicago in 1953, 1954, and 1957. A meeting also was held in Kansas City in January, 1957.

The conferences have been conducted on an informal basis, a chairman being named for each to control discussion and a secretary to prepare the agenda and record minutes of the session.

It is felt that the experience gained in the nine workshops has demonstrated that the more successful gatherings are those scheduled apart from USITA meetings as they permit more concentration on the work-shop schedule.

John Brady, secretary of the Louisiana Telephone Association and president of the LaFourche Telephone Co. of Grand Meadow, La., acted as chairman of the New Orleans meeting and Ray J. Riordan, secretary of the Wisconsin State Telephone Association served as secretary.

Representing 12 other states were Miss Josephine Poppleton, secretary of the Florida Telephone Association; J. E. Nelson, secretary of the Nebraska Telephone Association; H. H. Cabaniss, secretary of the Georgia Telephone Association; A. C. Herbert, executive vice president of the Pennsylvania Independent Telephone Association; William F. Miller, secretary of the Iowa Independent Telephone Association; Frank Barnes Jr., president of the South Carolina Independent Telephone Association; Keith W. Vogt, secretary of the Minnesota Telephone Association; R. W. Hedrick, secretary of the Missouri Telephone Association; Hamilton A. Cunningham, executive secretary of the New York State Telephone Association; George A. Schumacher, secretary of the Indiana Telephone Association; Daniel W. DeHayes, executive vice president of the Ohio Independent Telephone Association, and J. D. Garrett Jr., secretary of the Arkansas Telephone Association. Clyde S. Bailey, USITA executive vice president, was also in attendance.

Most of the discussions at the New Orleans meeting related methods which should be employed to implement, at the state level, the policies established by the industry.

Possible legislative activity in 1958 was one of the principal items meriting attention, particularly that dealing with the unfair and discriminatory federal excise taxes on telephone service. The secretaries emphasized the need for aggressive action, on the state level, to help stimulate public sentiment in support of the effort being made by the industry to relieve telephone subscribers of this tax burden through the repeal of these excise levies.

Sending out bill inserts, obtaining support of local newspapers and civic and business organizations, and contacting and writing legislators by telephone companies and their personnel were measures discussed as means of gaining support for the excise tax repeal.

Discussion of reimbursement of costs to utilities for relocating facilities along federal-aid highways centered about efforts now being made to have Congress repeal existing legislation that provides for such reimbursement to utilities.

With respect to federal wage-hour legislation, the secretaries agreed that the threat of elimination of the industry's exemption for operators in exchanges of 750 stations or less appears most formidable and they recognized the need for repetition of the facts to congressmen regarding the effect the loss of the exemption would have on the cost of operating small Independent telephone companies.

Other items that merited lengthy discussion periods were preparation and filing with commissions of exchange area boundary maps, toll compensation, extended area service agreements, conduct of state conventions and the sale and distribution of telephone directory covers by outside interests.

Mr. DeHayes and Mr. Herbert spoke of the methods employed by their associations in preparing exchange area boundary maps.

Methods of securing information from small companies required for making toll separation studies, and closer unity between the USITA and state associations in the matter of gathering toll data, occupied the period assigned to the discussion of toll compensation.

Principle interest in the matter of directory covers was centered in a recent court decision in one of the New England states approving attachment of plastic covers to telephone directories. This decision has generated new activity among distributors and producers of such directory covers. The secretaries were informed that this activity is spreading westward from the New England and Atlantic Coast states and that telephone companies must be alerted to the fact that protective tariffs prohibiting the use of foreign directory covers should be on file with state commissions if they hope to have grounds for combating the problem.

In concluding its New Orleans conference, the secretaries set the dates for two future meetings—one to be a luncheon meeting in October during the annual USITA convention, and the other a two-day workshop in Washington, D. C. on Jan. 6 and 7, 1959. Mr. Riordan of Wisconsin was named chairman and Mr. Nelson of Nebraska was elected secretary for the next 12 months.

Ind. Independent Manager Publicizes Excise Burden

Roscoe D. Pontius, general manager of the Rochester (Ind.) Telephone Co. expressed the sentiments of the Independent telephone companies in regard to the repeal of the telephone excise taxes in the following letter to the editor of the *Rochester News-Sentinel.*

"One of the largest contributors to the cost of government is the telephone user. Most people think of the taxes on the telephone company only as money paid out by the business. But every tax dollar the telephone company pays out, it must first take in—from telephone users. There is no other way. Taxes are necessarily a part of the cost of service.

"Nearly 1.5 billion dollars in taxes was paid by United States telephone customers in 1957. That is equivalent

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to 20 cents out of every dollar that the industry received for service.

"These facts indicate that the telephone is carrying its share of the country's tax load. But, in addition to the taxes which make up the 1.5 billion dollar annual payment, there is another tax burden piled on top of them. This is the federal excise tax of 10 per cent. In 1957 this increased the total U. S. tax on telephone service by an additional 550 million dollars.

"The telephone industry believes that this tax is discriminatory. Telephone service is an essential of American life. Jobs depend on it. Lives depend on it. Trade and commerce depend on it.

"But it is subject to excise tax at the same rate as furs, perfume, and jewelry. In fact, only a very few things, such as liquor, tobacco, club dues, and cabarets, are taxed at a higher rate.

"Telephones, electricity, and gas are all regarded as household necessities. There is no federal tax on electricity or gas. Nor is there any on local transportation. But the use of the telephone is taxed 10 per cent. One necessity carries a load that the others do not.

"The tax on local phone service began in 1941 as an emergency measure. The time has come for its repeal. It should not be continued longer lest it may come to be regarded as a permanent part of the tax structure.

"When this discriminatory tax is repealed the subscriber alone will benefit. None of it is retained by the company. It would mean a substantial reduction in individual monthly telephone bills, both on rental and long distance calls.

"We fully recognize the great problems involved in obtaining enough tax revenue to meet all the country's needs. But there is always the need, also—and lawmakers are always trying—to be as fair as possible in spreading the burden.

"We urge, therefore, that in doing whatever is necessary to solve immediate problems, they will also consider how to avoid perpetuating a high-rate excise tax on essential service. For even without this, telephone users are paying a pretty big share of the nation's tax bill."

To Keep Us Free

". . . moral indignation is essential in a free society. To remain free, a people must often be angry and they must be angry against their own officials. In this United States, such indignation is usually impersonal because few of us know our politicians and many would not care to know some. But indignation is good for the soul and the ancient adage, 'throw the scoundrels out!' applies to even one's best friends in public office."—GEORGE E. SOKOLSKY.

Way to Progress

"Technological change is the way we achieve human progress."—SAMUEL G. BAKER, *general manager, organical chemicals department, E. I. duPont de Nemours Co.*

How far are you from a telephone...right now?

If your telephone rang *now*, could you reach it conveniently? Thoughtfully placed phones throughout your home—in workshop, bedroom, kitchen—can save hundreds of steps each day! Additional phones *in color* are part of the bright new convenience of service by America's 4,400 Independent telephone companies ...providing *two-thirds of the nation* with the very best in local and long distance communications.

INDEPENDENT TELEPHONE COMPANIES

helping you reach all America

U.S. Independent Telephone Association
Pennsylvania Building, Washington, D.C.

THE Plant Man's Notebook

BY RAY BLAIN, TECHNICAL EDITORIAL DIRECTOR

FROM TIME TO TIME we receive comments of our readers insisting that it is safe to use an open flame torch in manholes to splice cable provided that the manhole is properly ventilated. One operating company takes a dim view of this procedure and cites the following quoted from its field instructions:

"Flames shall not be used in or near manholes. Furnaces, kerosene lanterns, and other flames shall be kept at least 10 feet from the manhole opening.

"Open flames, torches, lighted cigars, cigarettes or pipes shall not be brought near an open manhole, into a cover or tent over a manhole opening, nor taken into a manhole even though tests indicate that the atmosphere is satisfactory."

This may appear a bit drastic, but then perhaps it is far better to be safe than sorry.

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According to data furnished by the Automobile Manufacturers Association, the average motorist who purchased one of three low-priced cars during 1956 paid an average tax of $497.50. In addition, the motorist who drives one of these cars 10,000 miles a year pays an additional tax bill of $124.44.

•

The National Gallery of Art, in Washington, D. C., is about ready to open a new door to public enjoyment of the world-famous art treasures housed in the late Andrew Mellon's gift to the nation. The gallery hopes to inaugurate soon a service called "Lecturs," a means by which a visitor looking at a painting may tune in on the spot an authoritative commentary about the work.

For a small fee, the gallery visitor rents a little plastic radio attachment for the ear, with a compact radio receiver that may be worn around the neck. Thus equipped, he automatically tunes in on a closed-circuit radio broadcast as he enters an exhibition room. The commentary, which only he can hear, describes the paintings in sequence as he tours the room.

Queen Elizabeth II was the first visitor to try out the device when she visited the nation's capital last October. The lectures, lasting from 10 to 15 minutes for each room, are prepared and read by members of the gallery staff.

So far, 10 separate galleries have been wired. They represent various major periods of art. Together, they offer about two hours of commentary. The gallery also has an extensive program of live lectures and other programs open to the public, but the new medium has the added advantage that the visitor may choose his own time schedule during the gallery's open hours.

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While in Atlanta, Ga., the other day, our long-time friend, Col. Kirk Buchak, of the Signal Corps, took us out to a restaurant for dinner. This restaurant has no printed menu and all customers are served the same fare. The meal consists of fried catfish, raised in clear water, hush puppies, French fried potatoes and onions and coffee.

They keep bringing on fresh supplies as long as you will eat and when you have finished, they kid you a bit about not being hungry. Then, when the bill was presented, much to our surprise, it was only $1.50 each.

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Middle age has been defined as when your memory is shorter, your experience longer, your stamina lower and your forehead higher.

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Toll Computer Intercept equipment, furnished by Universal Controls Corp., has been installed and is now in operation at the Athens, Tex., toll center of the Gulf States Telephone Co. This equipment monitors 28 toll trunks from five intertoll-dial cities of Dallas, Corsicana, Tyler, Jacksonville, and Palestine and furnishes 100 per cent toll intercept for all toll calls for the 10 satellities served by the Athens toll center.

This is reported to be the only intercept equipment which may be placed in a toll center to serve any number of satellites or may be placed anywhere desired on the toll train to intercept a distant end office or offices.

Also, it is claimed to be the only intercept apparatus which can immediately intercept any call which may be dialed on the 10-digit dial regardless of the condition of the line in the end office. In other words, it will immediately intercept a non-working number on a party line even though an equipped number on the same line may be busy.

•

England is to have extended area service and distant dialing, starting in 1958. The first installation is to be made in Bristol and should be in operation towards the end of 1958. They will not have AMA or CAMA as we do, but theirs will be GRACE. This name comes from the initial letters of Group Routing and Charging Equipment.

A system of national telephone numbers will be built up as automation is extended throughout the telephone service. All of the national numbers will begin with "0". They will begin with "0" so that when you dial a national number your telephone will be immediately connected to GRACE.

GRACE will route the calls. She will also control the timing of them. As the person called answers, GRACE will start timing the call and will record units on the meter at the exchange in the same manner that local calls are now recorded on the meter. But, these units will be recorded at regular intervals throughout the call and GRACE will decide what the intervals will be according to the distance of the call.

Getting the best out of two worlds

by John Voss

In these days of supermarkets, department stores and streamlined business methods, I often think back with some nostalgia to the stores I was familiar with in my boyhood. I'm sure you remember the kind of stores I mean—the little corner grocery, the candy shop, the drugstore.

The thing I liked best about them was the close, personal attention I got from the storekeepers. Here I was, just a kid with not much to spend, but as soon as I walked in, I felt important. The storekeepers listened to what I had to say. They knew me and my family, and they were never too busy to chat about one thing and another. I always went home feeling good.

The old-time stores were wonderfully pleasant places, and I'm truly sorry there are so few of them left. Of course, we all realize that modern business demands the efficiency and economy of up-to-date techniques that we usually associate with bigness. Yet I personally feel that the advantages of *both* approaches *can* and *should* be combined.

All too often in business today this principle is being ignored. Too many companies are run like big machines—cold, formal, impersonal. They forget about human feelings in their dealings with customers. And it's done in the name of efficiency. But at Stromberg-Carlson we feel that you *don't* have to sacrifice warmth and friendliness to get efficiency. With a little extra effort, a manufacturer can achieve *both*—no matter how big he grows.

It's no news to you that Stromberg-Carlson has expanded pretty fast in recent years. As a matter of fact, we're five times as big now as we were fifteen years ago. While we're not one of America's mightiest industrial giants, we *are* a company of considerable size.

But all through our past growth—and in our expansion to come—we've maintained and will continue to maintain the same kind of close, personal relationship with you that we've enjoyed through the years. We operate that way not only because we like it, but because it's *good business*. We've built our reputation on personal service as much as on quality products, and we aim to keep it that way. In this sense we're a good deal like the old-time neighborhood store.

But at the same time we want to be sure we give you the advantages of dealing with a big, modern industrial corporation. I wish I could personally show all of you just how we do this. I'd like to take you on a tour of our up-to-date manufacturing facilities . . . our streamlined business offices with all the latest mechanical and electronic aids . . . our modern, well-equipped research laboratories. Our own rapid growth, plus membership in the General Dynamics family, make all this possible. I'm just as proud of these facilities as I am of the personalized way we help meet your needs and solve your problems.

I think of it as *getting the best out of two worlds*. Our experience is proving every day that this is the best approach.

John H Voss

Vice President and General Manager
Telecommunication Division

STROMBERG-CARLSON
A Division of General Dynamics Corp.
Rochester 3, N. Y.

ADVERTISEMENT

TELEPHONY'S Traffic Engineering Handbook

By Gilbert R. Brackett **Feb. 15, 1958**

Section 10 (Continued)
Equipment Nomenclature

MULTI-LINE SERVICE OBSERVING EQUIPMENT. An equipment arrangement for service observing which includes means for automatically associating any one of a number of subscriber lines or trunks with the observing desk, either directly or via trunk conductors.

SINGLE LINE SERVICE OBSERVING EQUIPMENT. An equipment arrangement for service observing which requires a separate set of conductors to the observing desk for each subscriber line or trunk under observation.

REPAIR SERVICE OBSERVING. The process of observing a representative number of telephone contacts between subscribers and repair service clerks or test deskmen for the purpose of measuring the quality of service rendered from the subscriber's viewpoint, or for employe training purposes.

CABLE TEST DESK. The cable test desk designed primarily for making measurements on exchange area cables and similar outside plant to determine the location of crosses, opens and grounds.

TEST TRUNK. The circuit arrangement which permits a testman to connect a particular line or trunk in any local or toll office.

STEP-BY-STEP PULSING TEST SET. An instrument designed for testing the pulsing response of step-by-step selectors, connectors, repeaters, etc.

PLUGGING-UP LINE CIRCUIT. The arrangement used for handling lines in trouble because of outside plant or station troubles. In automatic offices the plugging-up line circuit terminates in two jack circuits: (1) The "Trouble Intercepting Line," which is used in connection with intercepting calls to the line in trouble and intercepts terminating calls, and (2) the "Trouble Observation and Test Line," which is provided for supervising the line in trouble and for obtaining access to it for test purposes.

TRANSFER KEY. A key which moves a complete function from one location to another.

GROUPING KEY. A key which ties equipment together for more efficient operating during periods of light loads.

ALARM GROUPING ARRANGEMENT. The alarm arrangement provided in offices having more than one alarm panel whereby the throwing of a key extends the alarms at one panel to another alarm panel. Such an arrangement is useful when a full maintenance force is not on duty.

AMPLIFIER. A non-directional device which is capable of delivering an enlargement of the wave form or the electric current, voltage or power supplied to it.

TELEPHONE REPEATER. A combination of one or more amplifiers together with their associated equipment, so arranged as to provide two-way transmission in a telephone circuit.

RADIO FREQUENCY SUPPRESSOR. An arrangement for reducing radiation at radio frequencies arising from transient current generated in the normal operation of switching, signaling or power apparatus.

TELETYPEWRITER SERVICE. A commercial service using teletypewriters which, by means of keyboards, similar to the keyboard of a typewriter, transmit electrical impulses of such character as to cause the direct reproduction of the messages in typed form by machines arranged for such reception. This service may be furnished on a one-way or a two-way basis.

TELETYPEWRITER EXCHANGE SERVICE. A form of teletypewriter service in which suitably arranged teletypewriter stations are provided with lines to a central office where connections may be established between any such stations and any other similar station in the same city, or in any other city, at the request of the subscriber.

TELETYPEWRITER PRIVATE LINE SERVICE. A form of teletypewriter service differing from exchange service in that it is limited to service between specific stations. The service may be contracted for on a full-time or part-time basis.

TELETYPEWRITER OPERATOR. A central office employe who performs at the switchboard the functions required in establishing connections between teletypewriter stations and other functions associated with such operations.

TELETYPEWRITER STATION. An installed teletypewriter and associated wiring and apparatus in service for teletypewriter service.

Section 11
Miscellaneous Traffic Information

This section covers general traffic miscellany. While most of these items cannot be applied directly to traffic engineering problems, they will assist the Traffic Engineer in many instances and give the answer to some of the questions he receives regarding the service and operation of a telephone exchange.

Under average conditions approximately 12 per cent of telephone calls are not completed on first attempt because the called line is busy.

The average wait for the called party to answer, before hanging up, is 40 seconds. The average time for the called party to answer is 20 seconds.

The average busy hour is approximately 11 per cent of the total day load.

The *Busy Hour* is that continuous one-hour period of the day during which the volume of traffic is greater than during any continuous one-hour period of the same day.

Holding Time, usually expressed in seconds, is the total of the time taken to complete a connection, the time to maintain a conversation and the time it takes to disconnect or break a connection.

(Section 11 will be continued next week)

Courts and Commissions

Requests OK in Oregon to Pass On Municipal Taxes

The West Coast Telephone Co., Everett, Wash., on Jan. 21 petitioned the Oregon Public Utilities Commissioner for approval of a revised tariff covering the billing of subscribers within the boundaries of cities which impose taxes on the company.

These municipal taxes include franchise, business, occupation, excise or use-of-street taxes. The company seeks to add the following revised section to its tariff:

"When any municipal corporation or other local taxing agency imposes on the company any franchise, occupation, business, sales, license, excise or privilege tax or exaction, the amount thereof will be billed pro rata to customers receiving service within the boundaries of such municipal corporation or taxing agency by separately stating and adding to the regular billing to the customer."

Having found that sufficient cause existed to investigate the propriety and reasonableness of the above provision's adoption, the commissioner on Jan. 30 suspended it for a period not to exceed six months from Feb. 21.

Tighter Party-Line Law Sought in Rhode Island

A bill introduced in the Rhode Island Legislature on Jan. 29 would stiffen and broaden the law that now makes it a misdemeanor to refuse to relinquish a party telephone line for emergencies (TELEPHONY, Feb. 4, 1956, p. 31).

Introduced by Rep. Thomas F. Kelleher, the bill would include the jeopardy of human life as a reason a person could demand that another give up a party line.

According to a district court ruling in 1957, the existing telephone law was said to apply only to property damage. The proposed legislation would make it punishable by fine or imprisonment to refuse to give up use of a party line if property or human life are in jeopardy.

In the district court case, a charge was brought against a woman who refused to surrender the use of a line to another woman whose husband had been stricken.

The measure also would compel telephone companies to carry notice of the law in their directories.

Mo. Supreme Court Hears Utility Anti-Strike Appeal

A suit challenging the constitutionality of Missouri's public utility anti-strike law recently was taken under advisement by the Supreme Court after hearing arguments (TELEPHONY, Feb. 2, 1957, p. 31).

Known as the King-Thompson Act, the law permits state seizure and operation of any vital public utility when a work stoppage is threatened. Those responsible for a strike or lockout may be penalized by heavy fines under the act and workers jeopardize their job seniority if they refuse to continue work during a period of state seizure.

The high state court heard an appeal of an order by Circuit Judge Ivan Lee Holt Jr., granting the state an injunction against three labor unions engaged in a strike against the Laclede Gas Co. of St. Louis.

The strike started July 1, 1956, following which the company was seized by former Governor Donnelly for operation by the state. The unions refused to return to work, and the state brought suit to enjoin them from participating in a work stoppage. The injunction was granted July 13, 1956, and the unions returned to work the next day.

The pending case marks the first time the constitutionality of the entire King-Thompson Act has been put squarely at issue before the state supreme court. Although there have been other cases since the law was enacted in 1947, the court, in acting on them, has not passed on the validity of the act as a whole, and especially with reference to its provisions for state seizure, loss of seniority rights of strikers and other essential points which have been opposed by organized labor.

In representing the state in oral arguments before the court, Assistant State Attorney General Robert R. Welborn contended the law is a valid act under the Missouri constitution and is not in conflict with federal acts.

Morris J. Levin, representing the unions involved in the case, argued that Congress has pre-empted the field of labor relations and that the law should be declared invalid because it conflicts with the National Labor Relations Act and the Taft-Hartley Law.

Welborn contended that a Wisconsin utility anti-strike law, invalidated by the U. S. Supreme Court, had no bearing on the Missouri law. He described the Wisconsin act as a "comprehensive code for the settlement of labor disputes between public utility employers and employes," but concluded that the Missouri law was an exercise of the state's police power which Congress has not abridged.

"The United States Supreme Court," Welborn asserted, "has declared that the states are the natural guardians against violence. Congress has not taken from the states the right to exercise their police power."

Pointing out that the King-Thompson law is designed to protect the public from dangers growing out of a strike against public utilities, Welborn declared that dangers did exist during the Laclede strike, such as the injection of water in the gas mains, the threat of fire and explosion and the possible breakdown of the entire Laclede system.

Welborn further argued that the right to strike was not inherent, but is subject to limitations in the public interest. In this connection he pointed out that while the Wisconsin law prohibited all strikes against utilities, the Missouri act makes strikes illegal only after seizure by the governor in the name of the state.

Levin argued that Laclede was engaged in interstate commerce within the meaning of the National Labor Relations Act and that its labor relations are covered by federal law. He said

Congress has rejected seizure as a technique for handling labor disputes.

Also assailed by Levin as in conflict with federal law was the Missouri act's penalty section, providing for the loss of strikers' seniority and assessing heavy damages against striking unions and their officers.

Levin further charged that the King-Thompson Act destroys collective bargaining which is guaranteed by the state constitution and which includes the right to strike.

Denying that the issues involved in the case were moot as a result of settlement of the strike and return of the union members to work, Levin said seniority rights are still at issue.

Bell to Test Dataphone Service in Three States

The Dataphone, developed by Bell Telephone Laboratories, a new device that will enable machines to talk to machines over the same telephone lines used for spoken words, will go into operation shortly.

The equipment can transmit data produced or recorded by business machines—for example, the information on punched cards—at speeds equivalent to 800 words per minute.

The Dataphone, which converts information into musical tones for transmission over regular telephone lines, sends information about 10 times faster than present equipment.

The new service will be launched on a limited trial basis in New York, Michigan and Illinois this month. The limited offering will help the telephone companies to gauge customer demand, as well as ways of increasing the practical usefulness of the service.

The Dataphone consists of special pieces of equipment, which are supplied by the telephone company and linked up with telephone lines.

Acting as interpreters, these machines accept the electrical impulses of data-producing machines and convert them into tones (frequencies) that can be sent over telephone circuits. At the receiving end, the tones are reconverted into electrical impulses and reproduced on tape or punched cards, or some other appropriate business machine form.

A New York business man, for example, could pick up a telephone linked to a Dataphone and place a call to another company division in Chicago. He would then tell his Chicago associate that he is about to send some data, such as payroll information. Pressing a button would start information from a business machine or prepared tape flowing over the circuits.

A Bell System spokesman explained that the Dataphone is an important advance in telephone history.

"As business has grown and dispersed geographically," he said, "the job of management control has become increasingly difficult. Electronic computers and other high-speed data processing equipment are helping today's managers maintain this control.

"But high-speed computers at the home office must—if they are to be used most efficiently—be fed with data from far-flung locations. Important enough today, this will be of even greater importance in the future. We are confident that Dataphone will help provide the means for moving data from point to point rapidly.

"This device will not replace existing systems. Rather, it will help meet the growing need for more flexible data transmission arrangements."

It is expected that eventually customers will be able to transmit data to any point in the continental telephone network.

A number of special features may be obtained with Dataphone service, he explained. It would be possible, for example, for a headquarters location to pick up previously prepared data from distant locations after normal business hours by use of remotely-controlled Dataphone equipment.

For instance, each location during the day would prepare a tape of its reports. This would be placed on a tape "reader" connected to the Dataphone service when the office closes. The headquarters, keeping one attendant on duty in the evening, would send a special code to each branch. The previously prepared tapes would then be transmitted through the unattended equipment. The unattended machine would not only respond to telephone ringing signals automatically and proceed to receive the data, but would, if necessary, shut itself off again after the lapse of some minutes and ready itself to receive again.

Current models of the Dataphone are about the size of a cabinet-type drinking fountain. In the future they will be considerably smaller.

The Dataphone devices and associated telephone equipment will be provided by the telephone company. Customers will supply their own business machines.

The following rates, which are experimental, are incorporated in tariffs filed by the New York Telephone Co. with the New York Public Service Commission covering the furnishing of Dataphone service on a trial basis. These tariffs are effective Feb. 1, 1958:

	Per Mo.	Instl. Chg.
Digital subset	$40	$50
Recorded carrier—		
attended	90	50
unattended	120	50
100 speed Teletypewriter automatic sending and receiving	100	15

In any quotation of above rates, it must be clearly indicated that they are experimental rates for the New York Telephone Co.

Propose Rule on Foreign Exchange Service in Fla.

The Florida Railroad & Public Utilities Commission on Jan. 27 ordered that all telephone companies other than Florida Telephone Corp. having objection to a proposed revision of a rule relating to foreign exchange service, file their exceptions or objections within 20 days.

The commission seeks to broaden the existing intra-company foreign exchange service rule (Rule 11) to cover inter-company foreign-exchange service.

This proposed rule change came about through the following chain of events. On Dec. 13, 1954, the commission ordered Florida Telephone Corp. to file an amendment of its general exchange tariff covering the furnishing of foreign exchange service on exchanges located within the company's territory. At that time the commission also stated that the company did not need to provide in its tariff for foreign exchange service on exchanges of other telephone companies, but that the matter should be "indefinitely held open for future consideration should further complaints of lack of foreign exchange service be received from subscribers of said (Florida Telephone) company."

On Nov. 7, 1957, predicated upon a complaint of Pasco Packing Co., Dade City, Fla., relative to lack of foreign exchange service between its plant (which Florida Telephone serves) and the Tampa exchange of Peninsular Telephone Co., the commission held a hearing to determine whether it should direct Florida Telephone to provide in its tariff for foreign exchange service on exchanges of other telephone companies.

At this hearing, in addition to Pasco Packing Co. testimony, a representative of Minute Maid Corp. testified to a need by his company for foreign exchange service from its plant at Plymouth, Fla., served by Florida Telephone Corp., to the Orlando exchange of Southern Bell Telephone & Telegraph Co.

Also, officials of Peninsular Tele-

phone Co. and of Southern Bell testified that they are willing to do their part to furnish such service and that they presently offer and furnish foreign exchange service between their exchanges and those of other telephone companies who will join them in furnishing the service.

The commission also heard testimony that foreign exchange service is presently being furnished in Florida as follows:

Between Peninsular Telephone Co. at Tampa and Southern Bell at Vero Beach for the Sealsweet Corp.

Between Southern Bell at Jacksonville and North Florida Telephone Co. at Callahan for Williamson & Taylor Ford Co.

Between St. Joseph Telephone & Telegraph Co. at Tyndall Field and Southern Bell at Panama City.

Between Peninsular Telephone Co. at Bartow and Inter-County Telephone & Telegraph Co. at Fort Meade.

The commission proposes that the following revised Rule 11, of its rules and regulations governing telephone companies, be given consideration by Florida telephone companies:

"Foreign exchange service shall be furnished by each telephone company operating in Florida between its exchanges and between its exchanges and exchanges in Florida of other telephone companies through joint arrangements between such companies to any person applying for same who will pay the approved tariff rate for said service when facilities to furnish same are available.

"The tariffs of all telephone companies shall include, for the commission's approval, rates and charges applying to foreign exchange service and may provide that subscribers shall not use foreign exchange service for the placing of long distance calls through the toll board of the foreign exchange of another telephone company."

California Independent Asks Rate Increase

The Dorris Telephone Co. has filed an application for a rate increase with the California Public Utilities Commission, it was reported on Jan. 17. Robert Edgar, company president, said the last rate adjustment occurred in 1952 after he acquired the firm, which then had 40 subscribers, all in Dorris.

He added he has since spent $93,000 on improvements and has 450 subscribers in Dorris, Macdoel and vicinity.

Wis. Independent Asks Raise

The Eau Claire County Telephone Co., on Feb. 12 filed an application with the Wisconsin Public Service Commission for authority to increase rates.

USITA Plans Management, Engineering Courses

The United States Independent Telephone Association is offering two educational programs designed for telephone management and engineering personnel.

The USITA and the University of Kansas School of Business will offer the first management development program for Independent telephone executives in Lawrence, Kan., on July 14 to Aug. 9. The program has been planned by the Personnel Committee of the USITA and Dr. James R. Surface, dean of the Kansas School of Business.

The over-all objective of the program is to help Independent telephone management personnel to do a more effective job in their current positions and to prepare them for more challenging responsibilities. It is the aim of the program to help participants broaden their horizons with respect to their own jobs and their companies' situations, present and future.

The three major areas of instruction will be functions of administration, the American business climate and rate regulation. The case method of instruction will be used.

Guest faculty will include Walter F. Freese, professor of business administration, Harvard Business School, and A. J. G. Priest, professor of law at the University of Virginia.

Professor Freese is assigned to the sessions on control and financial administration, and Professor Priest will be assigned to rate regulation.

University of Kansas faculty members and their assignments are: Prof. Edward G. Nelson, American business climate; Prof. Frank Pinet, human relations in business; Prof. Charles B. Saunders, administrative policy and planning; Prof. Bertram L. Trillich Jr., merchandising. Each of these professors is recognized as a specialist in the field of his assignment. The program can accommodate 48 students.

Dean Surface, director of the program, is a former member of the Harvard Business School faculty.

"We are proud of the opportunity to cooperate in this undertaking," commented Franklin D. Murphy, Kansas University chancellor. "The program represents the result of extensive research, very careful consideration and hard work on the part of Dean Surface and the USITA's Personnel Committee. We are sure it will be very worth while for everyone who attends. Factors influencing USITA's committee to locate this new program here were the central location, Dean Surface's previous experience in management assistance and development work for telephone companies while he was on the faculty of the Harvard Business School, and the success of Kansas University's summer executive development program."

The second program to be offered by the USITA is its Telephone Engineering Management Conference which will be held from June 29 to July 25.

The conference will be held at Michigan State University in East Lansing, Mich. The staff of the 1957 conference is returning intact. They are Drs. T. L. Dahle, D. R. Fusfeld and G. Jones from the Michigan State faculty; Dr. A. Gruehr from Brooklyn Polytechnic Institute, and Fred Rahdert, chief engineer, General Telephone Co. of California.

Guest lecturers will include Dr. J. D. Ryder, dean, College of Engineering, Michigan State University; W. G. Long, scatter systems design engineer for Collins Radio Co.; V. N. Vaughan Jr., data and teletype facilities engineer, American Telephone & Telegraph Co., and R. C. Stiles, senior project engineer, General Telephone Laboratories.

Complete brochures giving detailed information, together with application blanks, will be mailed directly to all member companies soon. Application forms must be returned to Michigan State University before May 1. Registration is limited to 75 participants, so the USITA urges members to pick representatives to attend and to return application forms promptly.

Southern New England Co. Asks OK on Bond Issue

Southern New England Telephone Co., New Haven, Conn., asked the Securities & Exchange Commission to register 30 million dollars of 33-year debentures due in 1991, it was reported on Feb. 5. The debentures will be offered publicly at competitive bidding.

A portion of the proceeds are intended to repay $22,400,000 in advances from American Telephone & Telegraph Co. The balance will be for general purposes, including property additions and improvements.

Now, color conscious subscribers can be kept happy when you use WB Plastic Jacketed Beige Station Wire. A clear soft beige, harmonious in any surroundings, satisfies the most particular housewife.

WB Jacketed Station Wire is designed for fast, economical installation with stapling guns. Available in two, three and four parallel soft copper conductors. Conductors are insulated and color coded with free-stripping polyethylene and jacketed with PLASTITE in beige, brown or ivory.

WB

INDEPENDENT

11-8

WELL BUILT WIRES SINCE 1899

WHITNEY BLAKE COMPANY

NEW HAVEN 14, CONNECTICUT

Oregon Commissioner OKs Two Financing Requests

Sale of 7,000 shares of no par value common stock by Oregon-Washington Telephone Co., Hood River, at a price of $50 per share to United Utilities, Inc., an affiliated interest, was authorized on Feb. 6 by the Oregon Public Utilities Commissioner.

The Oregon-Washington company stated it will use proceeds to retire a $150,000 note to United Utilities and a $200,000 note to Peoples National Bank of Washington.

Oregon Commissioner Howard Morgan also approved the request of the Creswell Telephone Co. to borrow $35,000 from Stromberg-Carlson, a division of General Dynamics Corp. The loan is repayable in 240 consecutive substantially equal monthly installments.

The commissioner specified that, following the loan, the Creswell company's total indebtedness should not exceed 75 per cent of the depreciated original cost of its properties.

Texas Independent Asks New Raise

The Palestine (Tex.) Telephone Co. on Jan. 27 applied to its city council for rate increases averaging 18 per cent.

Rolla L. Johnson, company president, said the rate raise would be the first requested since 1953. From Oct. 1, 1953 to Dec. 31, 1956, over $575,000 has been spent on improvements, he added. The total investment as of the end of 1956 was $1,063,000.

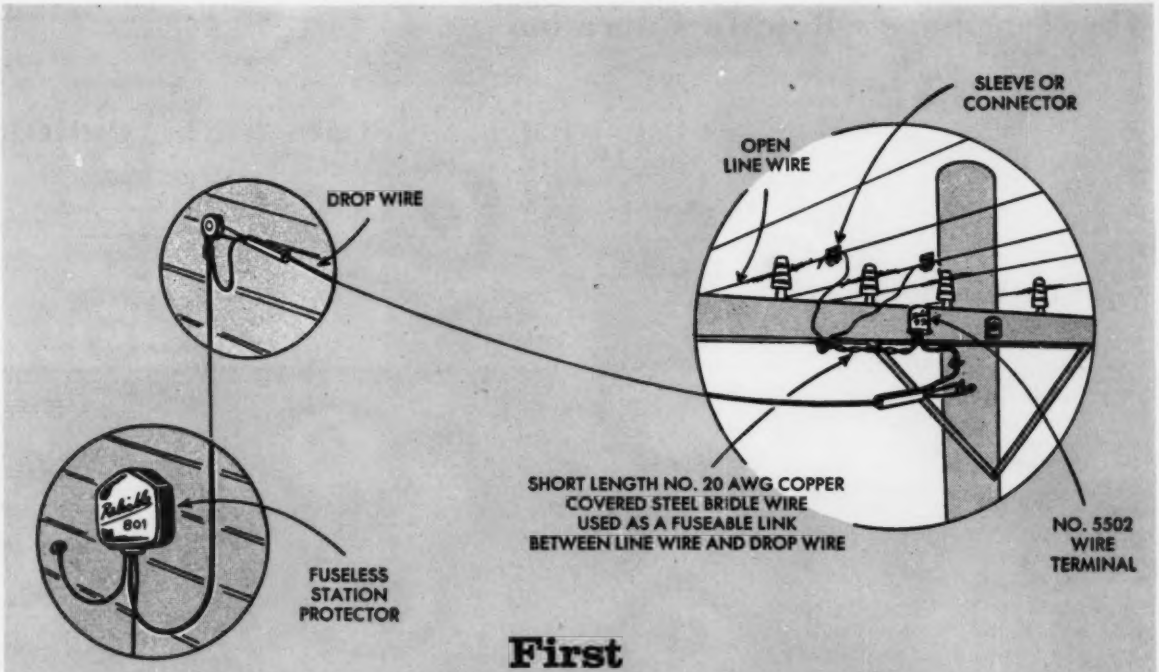
Present and proposed rates are:

	Present	*Proposed*
One-part business	$6.75	$8.50
Two-party business ...	6.25	7.50
One-party residence...	3.75	4.50
Two-party residence ..	3.25	3.75
Four-party residence..	2.75	3.00

Lincoln (Neb.) T&T Asks OK To Pass On Local Taxes

The Lincoln (Neb.) Telephone & Telegraph Co. on Feb. 6 asked permission of the Nebraska Railway Commission to establish the following tariff to provide for billing of local taxes to subscribers in the cities or towns which have imposed such levies:

"When certain taxes or fees, such as occupation taxes, license taxes, permit or franchise fees, are imposed upon the Telephone Company by a city, town or village in a telephone rate group having more than one exchange, such tax or fee shall, insofar as practicable, be billed in equal proportion to the telephone subscribers within the corporate boundaries of the municipality involved."


SLEEVE OR CONNECTOR
OPEN LINE WIRE
DROP WIRE
SHORT LENGTH NO. 20 AWG COPPER COVERED STEEL BRIDLE WIRE USED AS A FUSEABLE LINK BETWEEN LINE WIRE AND DROP WIRE
NO. 5502 WIRE TERMINAL
FUSELESS STATION PROTECTOR

ADVANTAGES

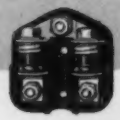
- People and Property are Safer—Abnormal Currents are Grounded
- No Fuse Troubles
- Air Gap Sealed Against Dirt and Moisture
- Low Maintenance Cost
- Insect and Weather Proof
- Small, Neat, Easy to Install

First Fuseless Protectors UL Approved for use with OPEN WIRE

Reliable Fuseless Station Protectors are now approved by Underwriters' Laboratories for use on circuits connected to open wire (see National Electric Code, article 800, current edition). This is in addition to the four year old approval for use with circuits from cables having metallic sheaths or shields.

All Reliable Fuseless Station Protectors employ self-contained No. 405 Protector Units with low cost replaceable elements.

Write for literature on Reliable Fuseless Station Protectors



No. 700

No. 801

No. 800

Reliable ELECTRIC COMPANY • FRANKLIN PARK, ILL.

A HALF CENTURY OF SERVICE TO THE UTILITIES

The Telephone's Role In Education

Telephones, Telecats and Teletots

By RUTH K. STROH*

AT FIRST GLANCE, the title of this article might seem to be written in the language of the outer spacemen who may some day invade our Earth! But, instead of space talk, this is the language some elementary school children developed in their communications studies which emphasized the telephone.

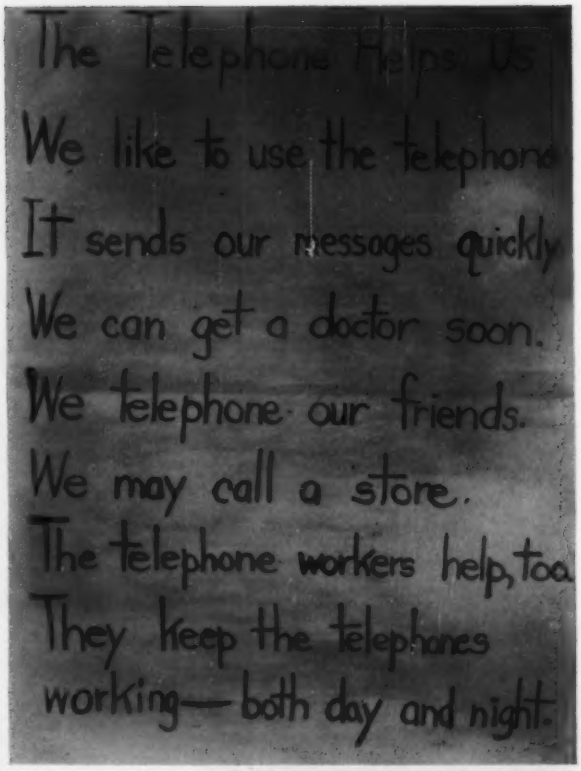
All schools include in their curriculum attention to the use of the telephone and the role it plays day and night in our lives. Some schools study it more intensively than others. Whatever the slant or approach, the ultimate goal is a better understanding and use of telephone equipment. Usually this means different ways of teaching facts according to the different grade levels.

Primary grades often employ the most motivating and novel means of studying the work of the telephone company and the use of the telephone. Applying the lessons directly to the lives of the children is one way the teacher has more success in the class activities. This often means using playtoy telephones, or the real equipment, in a traveling exhibit.

But today's children of the "TV age" seem to need more stimulating and challenging materials and new approaches. This may mean having the children use the exhibit or traveling equipment in newer ways instead of just reviewing it or holding mock conversations with each other.

Small children enjoy the "Telephone Doll" very much. Some have even placed the doll's name on their Christmas lists. They have made models of her and talked much about her shape and her dial. Early in arithmetic and art classes, the telephone receives attention. Later social studies delve into telephone instruction more deeply.

The children like to handle the office or local telephone and make necessary calls under supervision. Frequently, during the school year, the teacher tries to plan times when her groups may have the experience of answering and telephoning in *actual* true-life situations. In this way, students are practicing what will be needed for telephone use in the home and elsewhere.


The Telephone Helps Us
We like to use the telephone
It sends our messages quickly
We can get a doctor soon.
We telephone our friends.
We may call a store.
The telephone workers help, too.
They keep the telephones
working—both day and night.

How the telephone helps is presented to students in printed form (right) and graphically (lower cut) on posters and blackboards.

Some teachers have expressed a real desire for a telephone connection in each room. This idea is being considered by progressive groups. The telephone would not be a disturbance. Telephones in classrooms would be a vital and important means of providing in-school applications to everyday life. Much information would be gained, and youngsters would have interesting and *actual* telephone experiences. Telephones could be used on the same valuable basis as TV in schoolrooms.

Telephone exhibit materials, cut-outs from magazines, and actual telephone company bills and bulletins as well as materials from the library all help to clarify the work of the telephone company. Visits to telephone offices may be arranged so that students can appreciate more fully the work of the operators. If linemen are working near the school, students should use the opportunity to view them at work. Resource people, that is people who

*Miss Stroh, who has a bachelor of science in elementary education, taught the primary grades in the Baltimore County, Md., school system.

EDITOR'S NOTE: *Telephone companies over the country, both Independent and Bell, are furnishing schools with materials such as telephone dolls, traveling exhibits and telephone directories to be used in the study of communications as well as of other subjects.*

How teachers appreciate and utilize this material, as well as pupil reaction to it, is described in the following article, "Telephones, Telecats and Teletots," written for TELEPHONY *by an elementary school teacher.*

have direct contact with the telephone company, are invited in to speak to the children.

A primary grade had a unit of study on communications. A bulletin board display was arranged, with the guidance of the teacher, and captions were made for the pictures of the telephones, linemen, operators, dial testers, and splicers.

Under the picture of a child using the telephone, the students chose the newly invented word, "teletot," as an appropriate caption! A most unusual photo of a cat listening into a telephone receiver had been found in a newspaper. The pupils decided on the original title "telecat," for this picture. This is merely an amusing extension of the ways in which youngsters are impressed with words that begin with "tele," and their extensions of them. Tots at any age will appreciate the telephone, and its wide-world use, more through such intimate association with it.

Older students delve into the history of the telephone and they like to read about the laying of the cables for telephoning to other countries. Many express a positive desire to become part of the "world of communication" by becoming operators, linemen, or other workers in the telephone industry. These older children handle telephones freely and call to reserve seats for a concert, to plan a school excursion, or to obtain information from the library for their work.

Groups have been formed through the school year for the purpose of telephoning for various drives, collections, parties, and other school activities. To this age group in particular the color telephones have great appeal.

Telephones in the home, radio, and TV are considered resource and educational materials in the same way as reference books, magazines, and other printed matter.

Many capable teachers use telephone

Photos clipped from newspapers and magazines make an attractive bulletin board for a primary grade.

directories to provide excellent practice for their students. Directory practice is not only to find telephone numbers, but is incidental preparation for use of the dictionary, and other alphabetical indexes, and categorized materials. The telephone directory used in this way is a real source book. Students obtain needed practice in locating given names in the directory by the quickest method. The children delight in seeing who can be first to find the name or company assigned. Number work occasionally is given some practice by study of the numerals on the telephone directory pages.

Telephones not only are a part of units in "communication in the modern world," but are an important part of units on safety and health. The fact that policemen, doctors, firemen, and other vital community services may be obtained any hour of the day or night by telephoning is stressed. The importance of the telephone to servicemen, to the government, to the FBI, and to innumerable other people is discussed. Students are given an appreciation of the "safer feeling" that residents of lonelier, outlying districts have because of the presence of the telephone.

"Telephones are lifesavers" was the caption on one school exhibit. Looking into the future, some children said they would like to have telephones come complete with tiny TV-like images so that the called and the caller could see each other. They also wanted telephone connections in every room of every house and school. Their outlook is modern and promising!

Telephone quizzes are often held to summarize facts learned. In these, questions are asked and so-called "experts" participate. Candy telephones may be prizes.

The interesting shape of the telephone has been an art lesson for sketching, too. Science lessons explain "why" and "how" the inside devices enable the voice to be carried over many miles. Real thrills are experienced by children when a call is made to a far-away place.

Parents also appreciate the in-school telephone studies. Much attention is given to manners, proper length of conversations, and respect for the other fellow. That telephoning, like democracy, is a privilege to be *shared*, is stressed.

Telephones even play a role in the school speech-improvement programs. Children accustomed to using pictorial and printed matter, records and mirrors in speech class are finding that the telephone is an important addition to their "equipment."

It has been shown, in various instances, that a shy child, as well as a child who stutters when speaking directly to others may do a remarkably improved job of speaking when

(Please turn to page 61)

WHY

AN END TO
"OFF-HOOK" TROUBLES

LIFELIKE
TRANSMISSION

MODERN
FUNCTIONAL DESIGN

EASY, ACCURATE
DIALING

SIMPLIFIED
INSTALLATION

COLORS AND
TWO-TONES

TIME-SAVING
MAINTENANCE

DAYDREAM?

You can get all these features with Automatic's Type 80 Telephone!

Maybe you're still looking for *the* telephone that has *all* the features you want. If so, stop! Automatic's Type 80 Telephone is just what you've been looking for. Want proof? Then read—*slowly please*—the eye-opening points that follow (and note those *exclusive* features):

Automatic's Type 80 Telephone in new Forget-me-not Blue

- **LIFELIKE TRANSMISSION.** Excellent clarity, even on long lines—increases toll calls and toll revenue.
- **NO COSTLY "OFF-HOOK" TROUBLES.** Our "walking handset" (*exclusive feature*) toddles right into the cradle.
- **MODERN, FUNCTIONAL DESIGN.** Have a long look at the illustration and judge for yourself.
- **SIMPLIFIED INSTALLATION.** Time-saving "Installer's Hooklock" (*another exclusive*) keeps hook down—leaves both hands free to work on the telephone.
- **EASIER READING, ACCURATE DIALING.** New slanted dial, extended number plate and guiding arrowheads.
- **LOWER MAINTENANCE COSTS.** All Type 80 components can be removed quickly with just a screwdriver. And all units are equally accessible as well.
- **COLORS.** Build "2nd" telephone sales with Colonial Blue, Sunlight Yellow, Turquoise, Classic Ivory, Garnet Red, Sand Beige, Dawn Gray, Jade Green, Forget-Me-Not Blue, Camellia Pink and Gardenia White.

Want further proof? Then talk to any telephone man who has standardized on Type 80's. There are a lot of them...and they're the best boosters we have (followed closely by their subscribers). Next step is to send in your order. Address: *Automatic Electric Sales Corporation, Northlake, Illinois. Or call Fillmore 5-7111.*

AUTOMATIC ELECTRIC

A member of the General Telephone System—One of America's great communications systems

GENERAL SYSTEM

Packaged Luminous Ceiling Tested In PBX Room

By Deac Martin*

Ceiling lighting system in General Electric Co.'s Nela Park, Cleveland PBX room.

FOR PBX and comparable rooms an experimental packaged luminous ceiling, 8 feet x 21 feet, is available for areas such as shown in *Fig. 1*, which is a layout of a PBX room in service since mid-summer 1957 at General Electric Co.'s Nela Park, Cleveland.

The package contains the electrical channels for 44 RS fluorescent lamps on dimmer ballasts, a dimming control unit, a light metal grid for supporting the wakon (vinyl-type) light diffusers, all included. Lamps, however, are not furnished by the makers of the packaged luminous ceiling, The Wakefield Co. of Vermilion, O.

For architects, consulting engineers, and plant engineers, the company's architectural service department will make specific recommendations and provide drawings of an easily installed experimental room for areas of different size or shape than shown here.

There are two main considerations in determining the quantity and the quality of general illumination for switchboard or other areas where light signals and, to lesser degree, dials or instruments must be read quickly and accurately with visual comfort. In a PBX operation there must be enough light quantity to enable operators to read small print and to write tickets, memoranda and such. Opposed to this is the need for low-level illumination that allows lamp signals on the board to show immediately.

The requirements may vary between installations, while on a given switchboard there may be variations during working hours as the need for reading

(Please turn to page 44)

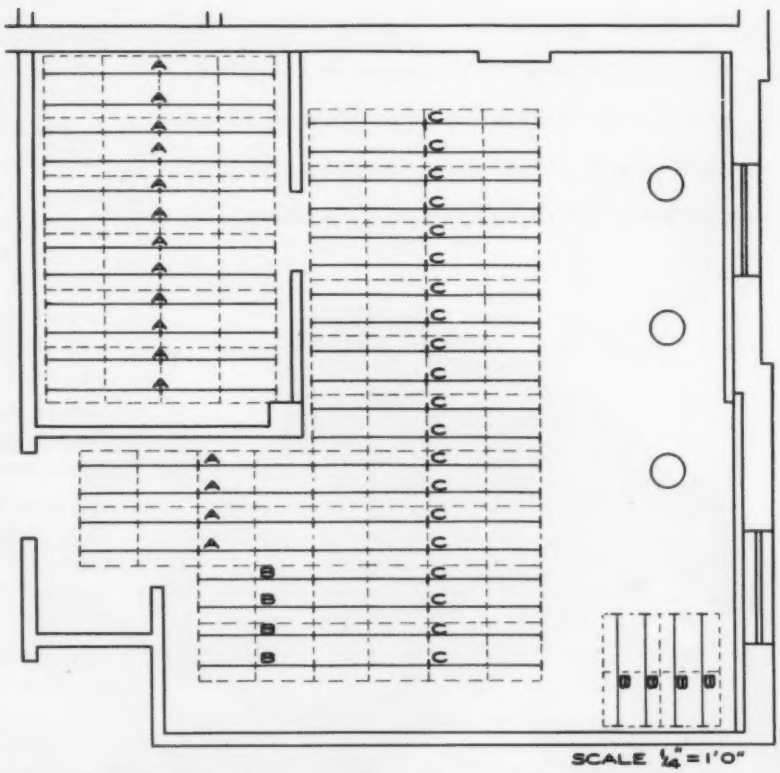

SCALE ¼" = 1'0"
A - FIXTURE FOR 2-40T12/RS LAMPS PLACED ON AN 8' CHANNEL.
B - FIXTURE FOR 1-40T12/RS LAMP PLACED ON A 4' CHANNEL.
C - FIXTURE FOR 2-40T12/RS LAMPS PLACED ON AN 8' CHANNEL. FIXTURE TO HAVE DIMMING BALLAST.
- FIXTURE FOR 1-150 WATT SILVER BOWL LAMP.
--- DASHED LINES INDICATE V-BARS SUPPORTING PANELS.

Fig. 1

*Mr. Martin is a consultant to the Wakefield Co.

Only 500 subscribers—only 6,000 toll calls per mo.

Yet Goodrich Telephone Company saves 40 hrs. each month with Recordak Toll Billing System.

Here's proof again that Recordak Microfilming pays off—even in the smallest companies!

Take the case of the Goodrich Telephone Company in Goodrich, Michigan. Before they adopted Recordak Microfilming, each toll call had to be described by hand on customers' bills. This was a 45-hour job! Errors were bound to occur. Besides, checking inquiries was a costly chore. Sometimes, it would take up to three hours to find a 15¢ item in the ticket files.

Recordak Microfilming has changed all this! Now toll tickets are photographed on a Recordak Junior Microfilmer . . . total charges and tax are entered on bill . . . then toll tickets are attached and mailed with it. Nothing could be *more simple*. Most important, it takes *85% less time* than the old way. And when a ticket does have to be checked, it's easy on the Junior's built-in film reader!

Recordak Junior Microfilmer combines Microfilmer and Film-Reader in one.

Subscribers' reaction has proved 100% favorable. They like to get original toll tickets with the bill. Helps them remember their calls.

Six-month cost—$17.25. That's less than $3.00 a month for both film and processing. Prices for the Recordak Junior Microfilmer start at a low $550; also available on low-cost monthly rental plan.

Prices quoted are subject to change without notice.

RECORDAK

(Subsidiary of Eastman Kodak Company)

originator of modern microfilming—
now in its 30th year

MAIL COUPON TODAY

RECORDAK CORPORATION
415 Madison Avenue, New York 17, New York

Gentlemen: Please send me more information on the Recordak Toll Billing System. CC-2

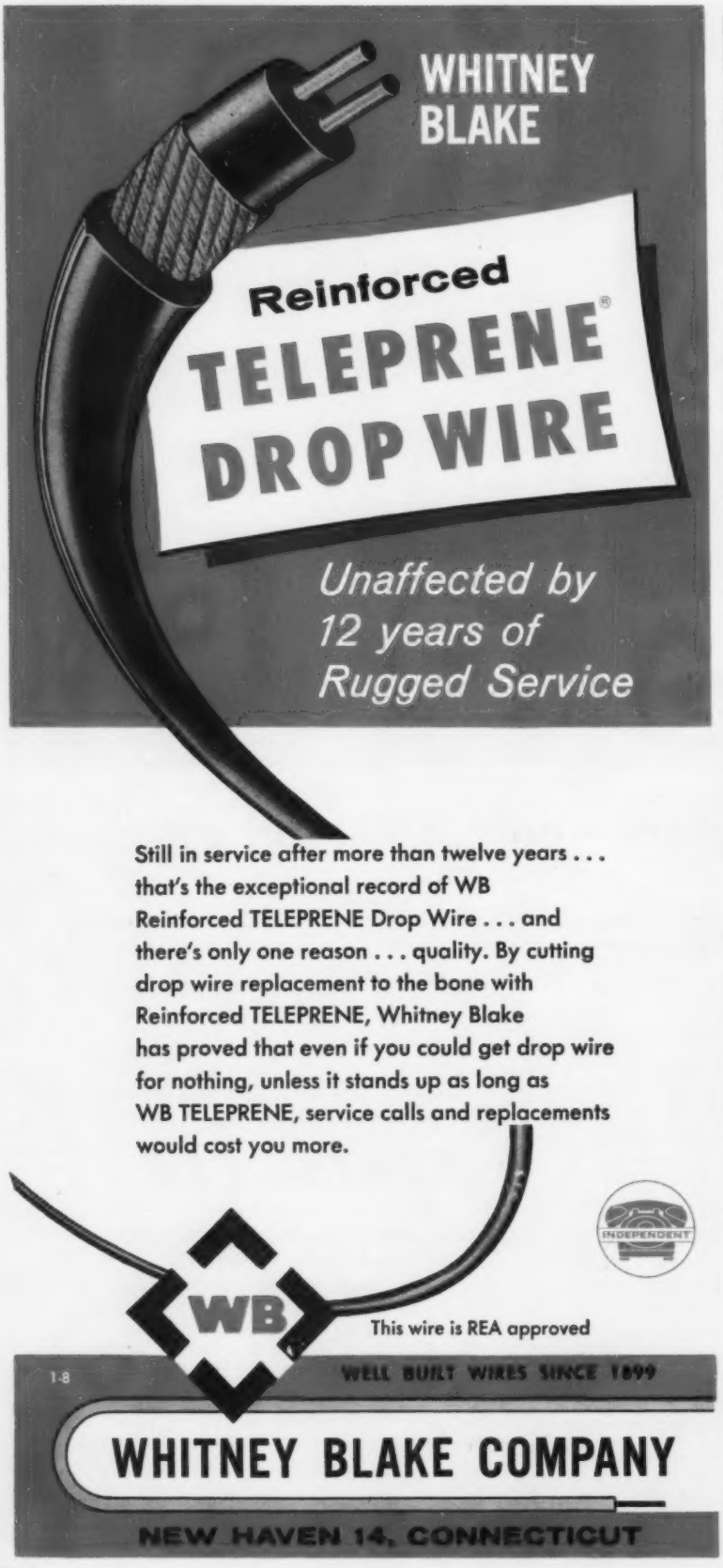
Name_____

Position_____

Company_____

Street_____

City_____ State_____


WHITNEY
BLAKE
Reinforced
TELEPRENE®
DROP WIRE
Unaffected by
12 years of
Rugged Service
Still in service after more than twelve years . . . that's the exceptional record of WB Reinforced TELEPRENE Drop Wire . . . and there's only one reason . . . quality. By cutting drop wire replacement to the bone with Reinforced TELEPRENE, Whitney Blake has proved that even if you could get drop wire for nothing, unless it stands up as long as WB TELEPRENE, service calls and replacements would cost you more.
INDEPENDENT
WB
This wire is REA approved
1-8
WELL BUILT WIRES SINCE 1899
WHITNEY BLAKE COMPANY
NEW HAVEN 14, CONNECTICUT

and writing may be greater than handling the signals, or vice versa.

As to the quality of the general illumination, basically it is best when it is of broad-area source with low brightness since these two factors reduce shadows and glare to a minimum. In the case of ceiling-hung lighting equipment the satisfactory color and reflectivity of the paint on ceiling and walls (even the floor is a part of a well-planned lighting system) deteriorates along with the aging lamps. To know just when lamp replacements and repainting are in order requires frequent and unusual inspection. In the past, incandescent lighting units have come nearest to meeting the requirements.

In the summer of 1957 a luminous ceiling lighting system was installed in a new telephone room at Nela Park in such a way as to provide a 40-foot-candle (fc) average in the room, 30 fc on the key shelf where operators read and write, and 25 fc on the face of the jack panel where signal lights are read.

These footcandles just about double the figures recommended as recently as 1954. They are in line with experiments by the Bell System in raising illumination in PBX areas.

The white ceiling above the plastic diffusers needs periodic painting and cleaning, as does an exposed ceiling, in order to keep the light level from deteriorating. With the flexibility which a dimmer provides, these periods can be stretched, since the dimming device allows some change when a footcandle meter shows that illumination has fallen below the desired figure.

For visual comfort the face of the black PBX board has been covered by a tan vinyl material with a reflectance factor of 25 per cent. Paper labels that indicate trunk lines are treated with silicone spray to improve the light transmission of the tiny lamps behind the signals.

The lamps marked "A" in the drawing provide 90 fc. The lamps marked "C" in the PBX room are extended from the wall behind the operators to a point just above the vertical surface of the jack panel. Three silver-bowl fixtures are at the windows; otherwise the entire area is illuminated by the fluorescent ceiling. The accompanying photograph shows the PBX room with the operators at work.

Point Of View

"There are no accidents so unfortunate from which skillful men will not draw some advantage, nor so fortunate that foolish men will not turn them to their hurt."—La Rochefoucauld.

Here's a telephone battery that:

lasts at least 40% longer!

requires 80% less current and water!

delivers high output all its life!

C & D's PlastiCal is the most outstanding floating-service battery of the last 50 years. Here's a basically new battery that combines a durable, clear-plastic case with lead-calcium* grids. This new alloy of pure lead and calcium gives grids the strength of those with a large antimony content, but eliminates the harmful effects of antimony.

**A development of Bell Telephone Laboratories*

C&D's PlastiCal has these advantages:

1. ***a 40% longer life*** than any lead-antimonial battery in floating-service. There is no antimony in the PlastiCal to poison negative plates.
2. ***requires 80% less current*** to maintain itself in a fully charged condition. Lower charging rate means plates last longer.
3. ***requires 80% less water.*** Because PlastiCal uses less current, there is less electrolysis of water.
4. ***low maintenance cost.*** PlastiCal can be checked at a glance because the electrolyte level is always visible.
5. ***delivers high output throughout its life.*** Rated capacity remains steady because negative plates do not become contaminated.

C&D

BATTERIES, INC.

of Conshohocken, Pa.

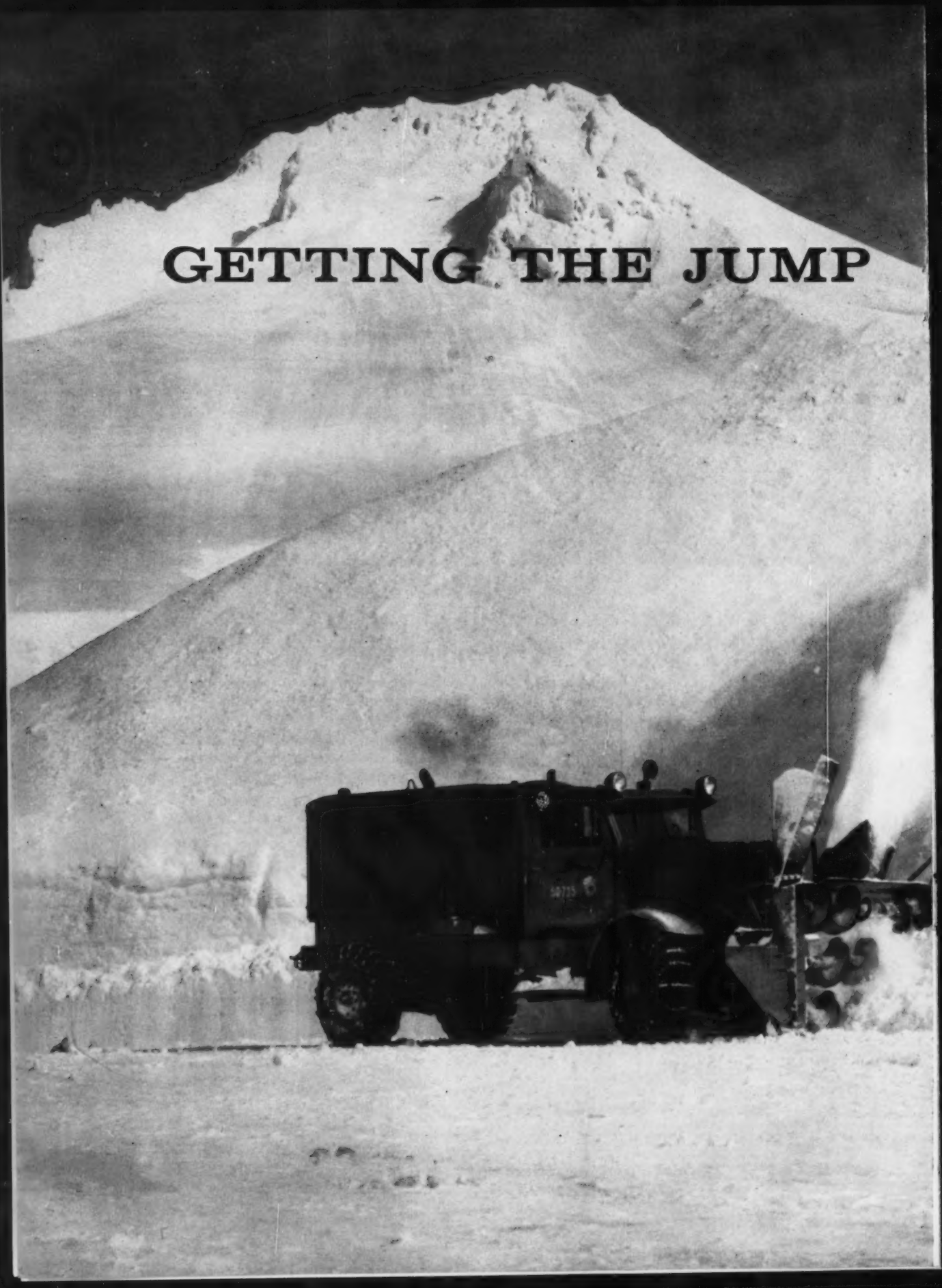
(In the Philadelphia area)

FREE!

For complete information and specifications on PlastiCal—the century's greatest battery development—write for folder T-528.

SALES AND SERVICE OFFICES IN PRINCIPAL CITIES FROM COAST TO COAST

GETTING THE JUMP



ON SNOW IN OREGON

It's hard for snow to fall anywhere on a road in Oregon without being reported to a district office of the Highway Department. There the report is relayed by private line teletypewriter to the State Highway Maintenance Office in Salem, and becomes part of the latest road and weather bulletin.

The nerve system of Oregon's Highway Department is a state-wide private line teletypewriter network furnished through the co-operation of three telephone companies—Oregon-Washington Telephone Company, West Coast Telephone Company, and Pacific Telephone and Telegraph Company.

Not only does this teletypewriter network help keep highways open and citizens informed of driving conditions, but it also means that equipment can be shifted to trouble spots in a hurry, and that tight control can be maintained over some 1.4 million dollars' worth of spare parts. Reliable and economical, the network is a fine example of how members of the telephone industry co-operate to serve the public better.

BELL TELEPHONE SYSTEM

1 A state patrolman radios in the latest road and weather report to a Highway Department District Office. Oregon's law enforcement agencies also have a teletypewriter network, jointly provided by the Oregon-Washington, West Coast, and Pacific Telephone and Telegraph Companies.

2 At a Highway Department District Maintenance Office the latest road and weather reports are collected and sent by private line teletypewriter to the State Highway Maintenance Office in Salem. There information from all over the state is gathered into up-to-date road and weather bulletins.

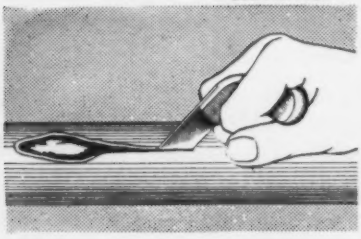
NEW KLEIN

stripping tool

for all types of control cable

Patents 2398979
2691822

Cat. No. 1558



Here is a new tool developed by Klein, designed to strip insulation from all types of control cable, flexible cords, PWC, telephone cable with vinyl or polyethylene jackets and bus drop.

Handle of cast aluminum, light in weight and with convenient grip; knife of tempered tool steel may be sharpened and is easily removed for replacement. This tool strips insulation from a few inches to as many feet as desired swiftly and simply. Does not damage conductors inside weatherproof sheath.

Write for bulletin giving complete information.

FREE POCKET TOOL GUIDE

100 years of service to linemen, electricians and industry is back of this new Pocket Tool Guide No. 100. A copy will be sent you on request without obligation.

ASK YOUR SUPPLIER

Foreign Distributor:
International Standard
Electric Corp.
New York

Mathias KLEIN & Sons
Established 1857 Chicago, Ill., U.S.A.
7200 McCORMICK ROAD • CHICAGO 45, ILLINOIS

IN THE NATION'S CAPITAL

Concluded from page 22

tinguished counselor from Texas objected to the word "effectuate." A New Yorker defended it, and pointed to the dictionary. "What does it mean?" asked the Texas lawyer. "To do something, to carry out something," said the New Yorker. "Well, why don't you say so in the first place, and people could understand you?" complained the Texan. At this point, a junior attorney almost broke up the meeting by excusing himself with the following apology: "Pardon me, gentlemen, whilst I effectuate."

One last word on bumblery and we'll close the book. An Indiana attorney writes a note in *defense* of bumblery, in a frank and humble spirit. We have permission to quote from this, if the anonymity is preserved. The letter was in part as follows:

"Bumblery is a handy way of making what little brains you have go a long way. Take me, an Indiana country boy with a gift of gab and not much else. I bumbled my way through college and law school. I bumbled my way through the bar examination. Now I'm bumbling my way through rate cases. Take away my bumbling license and I'd be driving a cab."

There is an honest man!

Mountain States T&T Gets Increase in Utah

The Mountain States Telephone & Telegraph Co. on Jan. 31 was granted a rate increase by the Utah Public Service Commission.

The increase granted amounts to $1,936,458 for 1958, or 8 per cent above Mountain States' annual gross earnings. "A hearing will be conducted by the commission on Feb. 17 to consider the company's proposals for just how the increase will be applied to rates for various classifications of telephone subscribers," Hal S. Bennett, commission chairman, said.

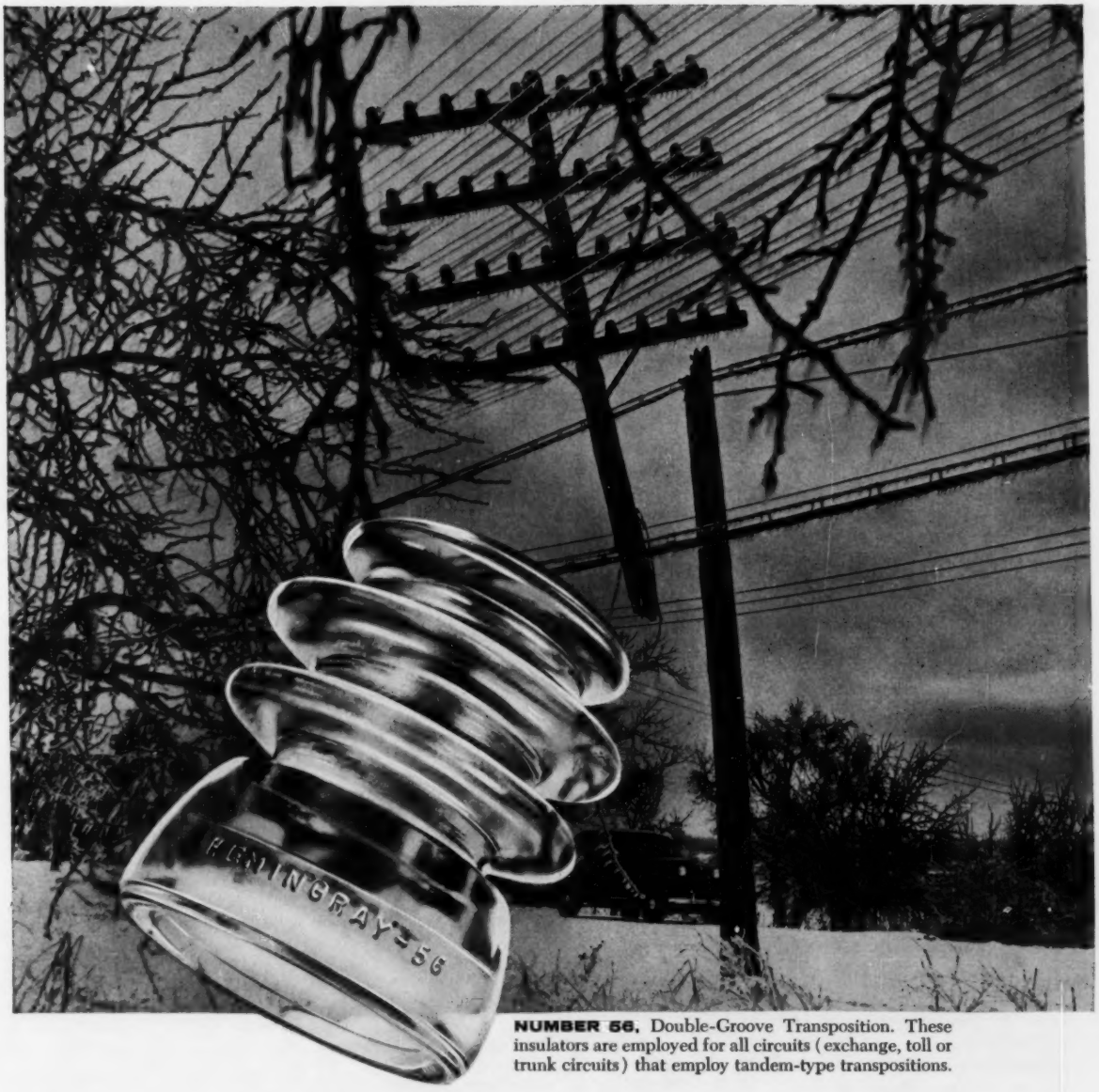
The commission decided to allow a sufficient increase to permit the telephone company to earn a 6½ per cent return on the commission-determined rate base.

The decision to allow an increase was reached following a public hearing on the company's proposals conducted in June, 1956, and a resumption of this hearing last December in the light of later developments.

1958 Convention Calendar

Association	*Date*	*City*	*Hotel*
Texas	March 3 and 4	Dallas	Baker
Kentucky	March 4	Lexington	Phoenix
Iowa	April 8 and 9	Des Moines	Fort Des Moines
Ohio	April 14, 15 and 16	Columbus	Deshler-Hilton
North Dakota	April 14 and 15	Fargo	Gardner
Nebraska	April 22 and 23	Omaha	Paxton
Indiana	May 7 and 8	Indianapolis	Claypool
American Railroads (Communications Section)	May 13, 14 and 15	Kansas City, Mo.	Muehlebach
Wisconsin	May 14 and 15	Milwaukee	Plankinton House
Illinois	May 21 and 22	Peoria	Pere Marquette
Kansas-Missouri*	May 26 and 27	Kansas City	Town House
Pennsylvania	May 26, 27 and 28	Bedford	Bedford Springs
Maine-New Hampshire-Vermont*	June 3, 4 and 5	Rockland, Maine	Samoset
California	June 4, 5 and 6	San Francisco	Sheraton-Palace
New York	June 16, 17 and 18	Schroon Lake	Scaroon Manor
Oregon-Washington*	June 19, 20 and 21	Portland, Ore.	Multnomah
Alaska	Aug. 11, 12, 13	Juneau	Baranof
Michigan	Sept. 9, 10 and 11	Grand Rapids	Pantlind
Arkansas	Sept. 15 and 16	Hot Springs	(Unannounced)
Rocky Mountain	Sept. 17, 18 and 19	Salt Lake City	Utah
West Virginia	Sept. 24 and 25	Davis	Blackwater Lodge
North Carolina	Oct. 6 and 7	Pinehurst	Carolina
USITA Annual convention	Oct. 13, 14 and 15	Chicago	Conrad Hilton
Virginia	Oct. 30 and 31	Roanoke	Roanoke
Oklahoma	Nov. 5 and 6	Oklahoma City	Huckins

*Joint Convention



NUMBER 56. Double-Groove Transposition. These insulators are employed for all circuits (exchange, toll or trunk circuits) that employ tandem-type transpositions.

Dependable ...in emergencies

When they're on the line, you can *depend* on their strength and uniform high quality.

When you order you can *depend* on prompt deliveries of what you need... when you need it.

Since 1870, when Robert Hemingray began mass production of screw-thread insulators, Hemingray has pioneered most of the insulator developments to keep pace with the requirements of the communication systems of the world.

Today, as always, Hemingrays are world standard for quality, and most of the overhead telegraph and telephone lines of the world are carried on *dependable* Hemingray Glass insulators. They are a product of Kimble Glass Company, subsidiary of Owens-Illinois, Toledo 1, Ohio.

HEMINGRAY INSULATORS
AN (O) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES · TOLEDO 1, OHIO

"Super-Splice"®
makes splices
waterproof
...from
inside out!

Superior Cable's exclusive economical "Super-Splice" is a plastic splice sleeve. It is sealed at one end and comes to you filled with an insulating and waterproofing compound.*

"Super-Splice" prevents leakage currents and breakdowns in the presence of moisture . . . good for 25,000 v. d. c.

Can be easily removed to re-enter the splice . . . the compound never hardens or oozes out no matter what the temperature.

*A Dow-Corning silicone compound.

"Super-Splice" is available for use with straight, butt or bridge splices.

For further information on economical "SUPER-SPLICE", write

SUPERIOR CABLE
SUPERIOR CABLE CORPORATION
Hickory, North Carolina

News on New Products

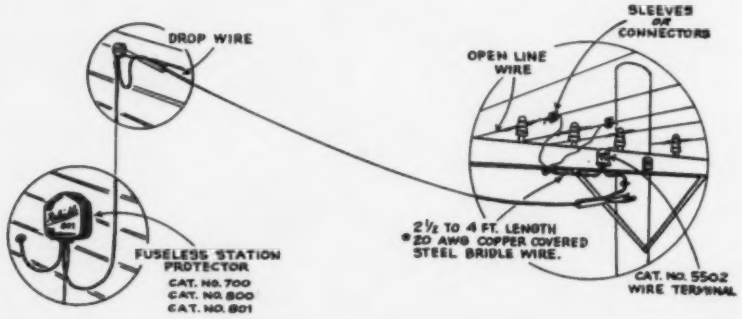
FUSELESS STATION PROTECTORS FOR OPEN WIRE—Reliable Electric Co.'s fuseless station protectors, Cat. Nos. 700, 800 and 801, have been tested and are now approved by Underwriters' Laboratories, Inc. for use in circuits connected to open wire.

These same protectors have been approved on similar circuits from *cable* since June, 1954.

The company states that improved station protection can be obtained where the following conditions are met as set forth in Article 800, paragraph 8011-d-3 of the National Electrical Code (current Edition, 1956) for fuseless station protectors:

"Where insulated conductors, in accordance with 8021-c-1 and 8021-c-2 are used to extend circuits to a building from other than grounded metal-sheathed cable, provided (a) the protector is approved for this purpose and (b) the protector grounding conductor is connected to a water pipe electrode or the grounding conductor or grounding electrode of a multi-grounded neutral power system and (c) the connections of the insulated conductors to the exposed plant or the conductors of the exposed plant shall safely fuse at currents less than the current-carrying capacity of the protector used."

The "connections" of line (c) normally consists of 2½ inch to 4 inch section of No. 20 AWG copper covered steel insulated bridle wire connected between the line wire and the station drop wire. The code does not limit the size of the drop wire between the bridle wire and the station protector.



The Reliable station protectors No. 700, 800 and 801 are approved and listed for use on the basis that a short length of bridle wire having a fusing current not greater than No. 20 AWG 40 per cent copper covered steel be employed between the open line wire and the drop wire to the station protector. Request NP807.

TELEPHONY PUBLISHING CORP.
608 S. Dearborn St.
Chicago 5, Ill.

Please have the manufacturer send me without obligation the literature indicated by the following numbers:

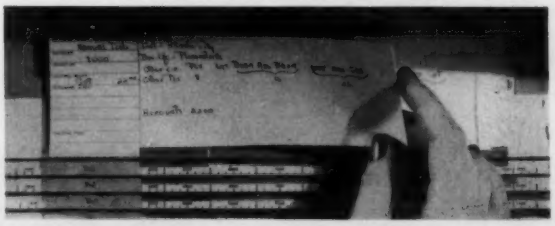
NP807_____; NP808_____; NP809_____; NP810_____;
NP811_____; NP812_____; NP813_____; NP814_____;
NP815_____; NP816_____; NP817_____; NP818_____.

Name..... Title.....
Company.....
Street.....
Town and State.....
2/15/58

SCHED-U-GRAPH®

It gives positive control...automatically...accurately...visibly on any job in telephone company operations. Whether it's the scheduling of force assignments in the Traffic Department, the loading of machines in the Punched Card Department, engineering time on work projects or getting out monthly bills promptly – SCHED-U-GRAPH *assures maximum use of time, workers and machines* through scheduling on a daily basis. Any unforeseen delays, a heavier work load or trouble spots are immediately pin-pointed in ample time for remedial action. SCHED-U-GRAPH master-charts the work load of any department, showing the starting and completion dates of every job. The changing status of every single job is graphically portrayed – simplifying operations and giving an at-a-glance picture of work progress. With its *maximum visible information* greater control is possible and even the tightest deadlines can be met. To find out what SCHED-U-GRAPH visible scheduling *can do for your company, write to* Room 1253, 315 Fourth Avenue, New York 10, New York.

Remington Rand
DIVISION OF SPERRY RAND CORPORATION



The time required to complete a job is charted by inserting a card cut to a length indicating that time. This forms a visible, easy to read color bar.

WHITNEY BLAKE

SELF SUPPORTING

Multiple Drop Cable

FAST INSTALLATION

STANDS UP IN ANY CLIMATE

Where multiple drops are required, WB Multiple Drop Cable does an outstanding job. The color coded polyethylene insulated conductors are twisted into pairs with length of lay systematically varied to minimize cross talk. An aluminum shield is used and a special WB black polyethylene jacket protects the whole from deterioration in any climate. WB Multiple Drop Cable is self supporting when used with spiral type deadends.

INDEPENDENT

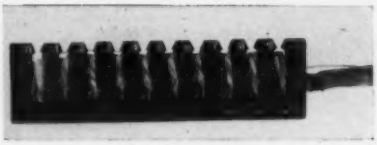
WB

6-8 WELL BUILT WIRES SINCE 1899

WHITNEY BLAKE COMPANY

NEW HAVEN 14, CONNECTICUT

TERMINATING BOARD—Murphy Engineering Laboratories has announced the completion of a new terminating board (Model TBZ), which replaces the earlier Model TB and the



standard tag board, as well as the later combination tag and terminating board (Model TTB).

The new board uses 10 standard binding posts instead of the 20 special ones and has 10 slots instead of 101 holes as in standard tag boards. Request NP808.

•

RECORD PACK—Acme Visible Records, Inc. has introduced a "Activisible" record pack which makes any drawer a visible record file. By lifting with a single motion it opens to fully visible

records. Pack of 25 cards, 50 records, requires only ½ inch of filing space. When the file is open, cards lie flat in natural posting position; when it is closed, the pack can be carried easily. The pack may be used for every kind of record. Request NP809.

•

DITCHER—Barber-Greene's Model 705-B "Runabout" ditcher now features a maximum digging depth of 56 inches.

This represents an increase of 8 inches in maximum digging depth over the former 48-inch maximum. The new longer boom will also cut the full range of widths, 5½ inches, 7½ inches and 10½ inches, which the "Runabout" has featured since its introduction.

The "Runabout" with the new, longer boom, also features Barber-Greene's exclusive all-hydraulic infinitely variable, crowding speed control,

BUILT TO TAKE ABUSE!

—Outdoor Monophones for Exposed Locations

Weather-proof construction—inside and out—guarantees long trouble-free service. Look at these features!

- **Rubber-covered wiring**
- **Windings impregnated with moisture-resistant compound**
- **Waterproof jacket over handset cord**
- **Cast aluminum alloy case**
- **Cam-locking door with rubber gasket**
- **Splash-proof sound vents**

The Outdoor Monophone easily mounts with four bolts or lag screws on pole or wall. Conduit openings are provided at both top and bottom of case. All connections are made through the terminal strip, and can be easily changed.

Remember—for anything in the telephone field, call Automatic first. Our complete line of products will meet your every need. For more information on the Outdoor Monophone, write for Circular 1873. Address: *Automatic Electric Sales Corporation, Northlake, Illinois.* Or, call *Fillmore* 5-7111.

AUTOMATIC ELECTRIC

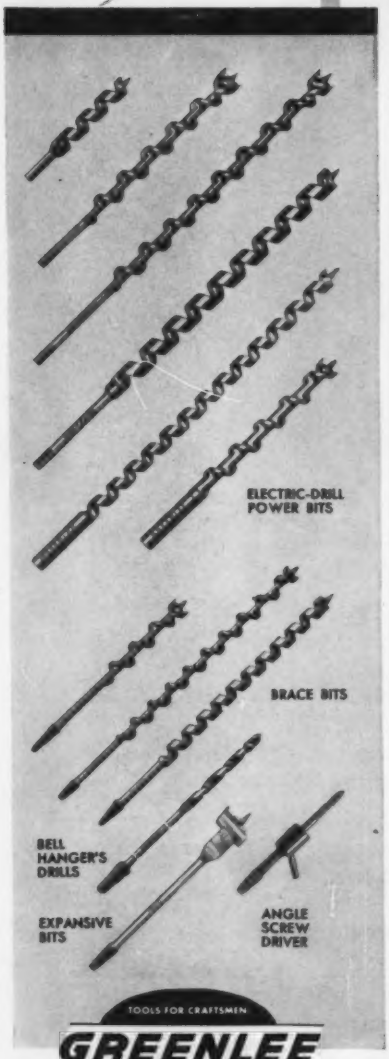
A member of the General Telephone System
One of America's great communications systems

GENERAL SYSTEM

high-quality, long-lived

BORING TOOLS

for pole, crossarm, and timber work . . .



TOOLS FOR CRAFTSMEN

GREENLEE

Whether you need to bore deep or shallow holes, small or large, there is a GREENLEE bit, drill, or auger for the job! Various lengths and styles for electric drill or hand-brace use. All of highest quality materials and correct design for easy boring, clean cutting, and long life under hard usage. Stocked by leading telephone supply distributors . . . see yours or write direct for literature.

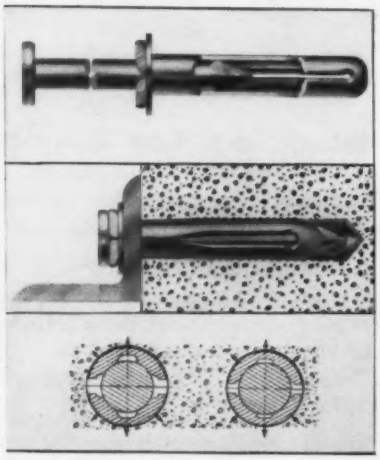
Greenlee Tools Co., 2062 Columbia Ave., Rockford, Ill.

"Hydracrowd"; a 15 mph road speed, an optional hydraulically driven discharge conveyor, a comfortable all-weather operator's cab, a fluid coupling between power unit and drive mechanism and a special differential which aids traction on mud or ice by feeding power to whichever drive wheel may be on firmer footing than the other. Request NP810.

•

MASONRY ANCHOR—An improved anchor for use in masonry, concrete or cinder blocks has been announced by Diamond Expansion Bolt Co., Inc.

The anchor is designed so that it can be used in holes that are slightly over or under size in diameter. Normally, hole size is a critical factor in determining the holding power of wall anchors, according to a company spokesman. But, he said, with the new hammer-drive anchor, hole size is no longer so critical and application time is thus materially reduced.



Top: Cut-away shows land and groove inner surface of new design anchor. Center: Shows how hammer drive anchor expands within hole drilled in masonry. Lower left: Nail bears against raised ribs, expanding anchor shield in slightly oversize holes. Lower right: Illustrates wedging action that allows new anchor to be used in undersize holes. Nail flattens ribs; squeezes them into grooves.

Outwardly, the new Diamond anchor is completely conventional, consisting of an aluminum shield and a galvanized nail. However, along the inner surface of the shield there are four longitudinal rifle barrel type lands (ribs) and grooves (valleys). These account for the anchor's flexibility with regard to hole size.

The lands reduce the inside diameter of the shield and allow for increased outward expansion insuring that the shield will hold securely in oversize holes. Because of their shape, the lands flatten out into the grooves when the anchor is inserted in an undersize hole and the nail is driven in. Because the nail only contacts the shield at four points (along the ribs) and because of the shape of the ribs it is easier to drive it home.

The new Hammer Drive Anchor is available in a range of sizes from 3/16-inch diameter and ⅞-inch length to ½-inch diameter and 3½ inch length. The combination of aluminum shield and hot dipped galvanized nail insure a rustproof assembly. Request NP811.

•

PIPE—CABLE FINDER—A new transistorized M-Scope pipe—cable finder has been developed by Fisher Research Laboratory, Inc. The new detector combines all the advantages available through new electronic techniques and materials, the company reports. Transistors, printed circuits, indestructible Fiberglas cases, and single turn solid aluminum detecting loops are some of the new materials used. Briefly these technical advances mean a far more accurate, more efficient, more durable, and more economical detector with greater depth penetration than

3 BENEFITS a FITCHBURG CHIPPER brings to your line clearance operation

New Jersey Bell Telephone, Vineland, praises Fitchburg Chippers

NEW JERSEY BELL TELEPHONE COMPANY

17 LANDIS AVE.

VINELAND, N. J.

S. B. DUBIVSKY
DISTRICT PLANT SUPERINTENDENT

July 28, 1955

Mr. W. O. Forman, President
Fitchburg Engineering Corporation
Fitchburg, Mass.

Dear Sir:

Line clearance work in this part of New Jersey is of such proportions that disposal of brush is a continuing problem of expense and maintenance of good public relations.

We are glad to report that, in our opinion, the Fitchburg Chipper does the job at low cost and eliminates many of the problems which accompanied the loading, hauling, dumping or burning of brush and cuttings.

Chipping, as a method of disposal, has produced a favorable reaction in the attitude of governing bodies and the general public which we hope will continue to operate to our advantage in securing and maintaining line clearance.

The chipper has also produced an important dividend in the reduction of possibility of accident arising from multiple handling and disposal. In this connection, we are favorably impressed with those design features of the Fitchburg Chipper which provide for the safety of operating personnel.

Very truly yours,

S. B. Dubivsky
District Plant Superintendent

sbd-a

FITCHBURG ENGINEERING CORPORATION

FITCHBURG, MASSACHUSETTS

You'll be interested in how the 3 big Fitchburg Chipper benefits listed below apply to your operation. Read what New Jersey Bell Telephone, Vineland, says about their experience.

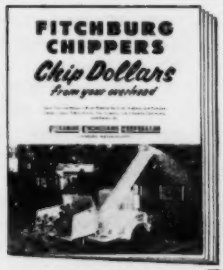
1 Low cost brush disposal. Fitchburg Chippers help get your line clearance job done with fewer men, less equipment, less cost. No more loading, hauling, dumping, burning. Chips are blown to side of road or right of way.

2 Good public relations. Wood chips provide a neat, organic soil dressing that stays in place—helps keep up roadside appearance, keep down weeds. Where chips cannot be left on job-site, most crews give chips to the nearest farmer or gardener for use as valuable mulch.

3 Safety in operation. The Fitchburg Safety Spring, or spring-loaded feed plate not only assures equal ease in chipping all sizes of wood to the machine's rated capacity; it also provides an added safety factor—aids in protecting the operator in case metal or foreign material is accidentally fed into the machine.

NEW FREE BOOKLET

"Chip Dollars from your Overhead." Mail coupon below for your copy.



FITCHBURG ENGINEERING CORPORATION

Fitchburg, Mass., Dept. T-28

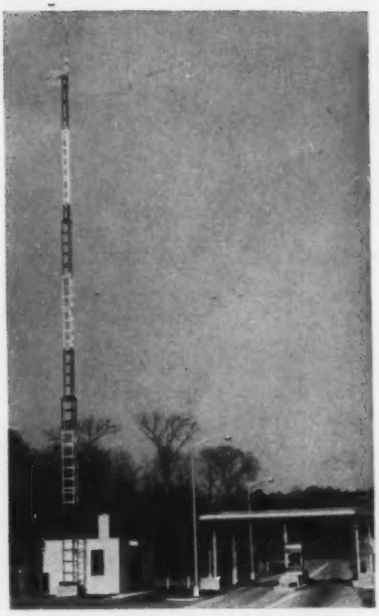
Send Free Copy of "Chip Dollars from your Overhead"

Name.....

Position.....

Company.....

City or Town.....State.....



Communication's Most Versatile Tower . . . the STAINLESS "SC" (Self-Supporting)

- Clean, economical, dependable structure
- Serves many purposes
- Space-saving uniform cross-section
- Easy to erect
- "Natural ladder" construction affords easy maintenance

Quick, expeditious handling of communications is assured year-'round by this clean, economical and dependable self-supporting structure.

The SC Tower is sturdy, and being free of guy cables is particularly adaptable where land space is at a premium.

Available as straight uniform cross-section for short heights, graduated uniform cross-sections for taller use.

Call or write for details.

Stainless, inc.
NORTH WALES • PENNSYLVANIA

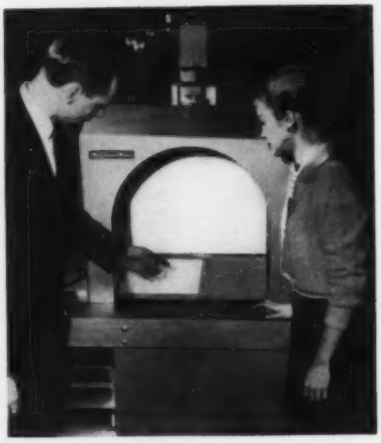
ever before available, the company states.

Transistors, in addition to their many other advantages for field detectors, provide battery economy. The battery life in this new unit is estimated to be 1,500 hours of continuous operation. This means a battery life in excess of one year of normal field use between battery changes. Battery operating cost is less than one cent per day. There is only one battery in each unit. Other new features include simplified operation procedure, built-in battery testers, power selection control, detachable carrying belt, complete illustrated instructions.

Operating weight complete is 12 pounds; color, bright red, maroon, and silver. Request NP812

•

MICROFILMED DRAWINGS — Reproduction of microfilmed engineering drawings for reference purposes can now be made on a new microfilm reader-enlarger-processor known as REP II which has been introduced by Remington Rand Division, Sperry Rand Corp. The machine was developed specifically for the use of tabulating aper-



ture cards containing 35 mm film. It will be placed on the market for use, also, with either roll film or acetate jackets in either 16 mm or 35 mm size.

The REP II provides for opaque visual reference to the filmed drawings, enlarging them to a 17 x 22 size on the reading table. If one or more prints of the drawing are desired, the viewing table is swung out of the way. A conveyor belt system beneath it is put into action to bring a sheet of sensitized photographic copy paper into position under glass beneath the enlarging projector. REP II can use either standard weight photographic enlarging paper or a translucent intermediate paper for ultimate further reproduction on spirit, diazo or blue print machines.

After exposure the sheet is carried through a processing section and emerges damp-dry within 50 seconds after exposure. Subsequent prints can be produced at 50 second intervals so that the machine, at full capacity, can turn out as many as 60 prints per hour.

The entire process of reference and reproduction can be completed in the single unit. REP II can be located and operated in the engineering or drafting department without the need for sending negatives, reels or aperture cards to another department for reproduction since no darkroom facilities are needed. Request NP813.

•

PLIERS—Twice the cutting ease is a feature claimed for a new lineman's pliers offered by Utica Tool Division of the Kelsey-Hayes Co. The new 9-inch pliers weigh only one ounce more than conventional 8-inch pliers.

Jaws are electronically hardened and actual tests prove that the hand-honed edges are excellent for 100,000 or more cuts the company states. Fingers cannot be pinched nor can dirt clog the counterbore in the tool. Request NP814.

•

PRUNING SAW—Design of an improved reciprocating pruning saw with a 50 per cent more efficient cutting action has been announced by Miller-Robinson Co. The company manufactures the "Limb-Lopper" line of trimming and pruning tools which operate by air pressure.

ESCO RINGING EQUIPMENT

MEMBER

ADDITIONAL ESCO FEATURES (details in future ads pictured on the dial) — further explain why Esco components are included in installations of prominent suppliers like Automatic Electric Co., Federal Telephone and Radio Corp., Kellogg Switchboard and Supply Co., Leich Sales Corp., and Stromberg-Carlson Co.

motor-driven tone alternators for tones matching Bell System

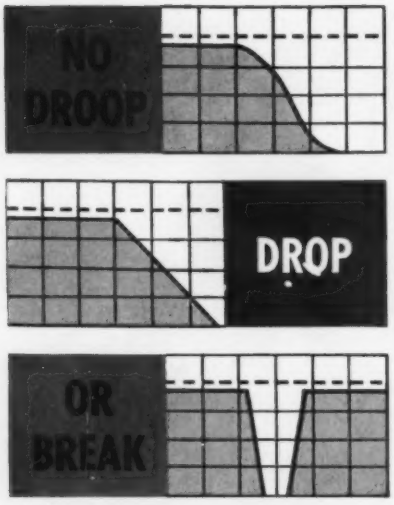
Esco tone alternators combine a drive motor and up to three permanent-magnet tone generators in a single frame. The alternators develop standard Bell System 500 and 600 modulated 120 cycle tones. An optional third circuit supplies a 420 modulated 40 cycle tone for ring back. What's more, with Esco motor-driven tone alternators, the same drive motor supplies driving power for the interrupters as well. This integrated design saves space and equipment and it means better balance and alignment, too.

As you would expect, Esco alternators feature permanently-sealed, precision ball bearings, protected construction, finest materials and workmanship, plus rigid tests and inspection throughout manufacture — they're made by specialists in rotary electrical equipment.

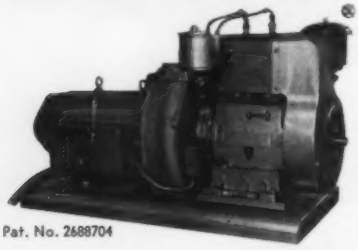
These are some of the reasons why Esco alternators give smoother, quieter operation and longer life — some of the reasons why so many equipment engineers and suppliers choose Esco. But get the full facts for yourself. Send for our free booklet on ESCO RINGING EQUIPMENT today.

Write today for full information

ELECTRIC SPECIALTY CO.
176 South Street, Stamford, Connecticut



in Communications with U. S. MICRO-POWER



Pat. No. 2688704

Your Insurance Policy for . . .

Stable Continuous Uninterrupted

Communications Power

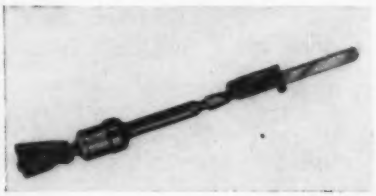
Micro-Power operates *with* the main source of power. No time consuming "load transfers." No "power outages" *even for precious seconds!*

Micro-Power Units are available in 1500, 3000, 5000 and 10000 watt capacities. For complete information, specifications, and demonstration, write . . .

UNITED STATES MOTORS CORPORATION
LIGHT US POWER
OSHKOSH · WISCONSIN

U. S. MOTORS CORP.
102 W. 5th Avenue
OSHKOSH, WISCONSIN

Previous models of the reciprocating saws, intended to reduce the fatigue encountered with hand pruning saws, have been standard trimming equipment since 1950. New design features



have now increased the reciprocation from 800 to 1,200 strokes per minute. This additional speed, while increasing the cutting action, lends smoother operation to the saws, and further lessens hand fatigue. Vibration has been greatly reduced. At the same time, the safety and light weight features of the equipment have been retained.

Newly designed saw blades also play their part in a smoother, faster action. The teeth angles are now nearly equal, providing a more evenly proportioned action between the push and pull cycles. Results are a more efficient cut in both directions, and further lessening of vibration and fatigue.

Key to the improved reciprocating action, according to the company, is a redesigned valve mechanism for faster transfer of air pressure and a new handle which requires less hand pressure than formerly. The saws are not intended to replace chain saws for demolition work, but to accomplish smooth trimming at a steady cutting pace over a period of many hours. Standard models, which may be extended as needed, reach easily into places inaccessible to hand or chain saws. Both insulated and non-insulated models are available.

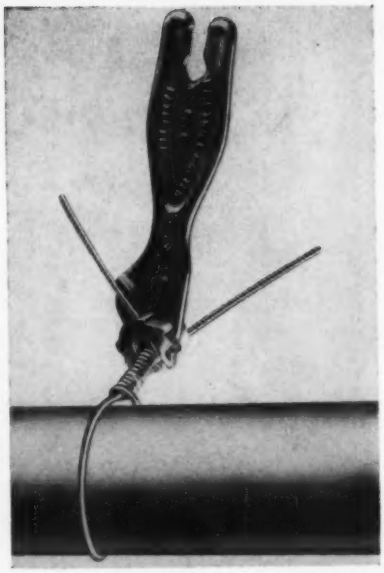
The manufacturer furnishes complete lopper, saw and air compressor setups adapted to user needs. Request NP815.

•

STRAND WIRE TWISTER — Dockendorff & Co. recently developed the "Twistmaster," a new tool designed to twist and form 8 to 14-gauge open strand wire, work-hardening the wire as is twists.

According to company officials, the main advantages include a simple ratchet-type, one-man operation and the ability to wind wire tight and fast under extreme conditions and in the most constricted areas. After wire strands have been inserted into the tool, the twisting and forming action may be carried out by one hand if necessary.

The "Twistmaster" is the same size, grip and retail price as a standard pair



of standard pliers and is built of tempered steel. Request NP816.

•

POLE PULLER—A new method of pulling utility poles has been announced by The Joyce-Cridland Co., manufacturers of jacks and lifts.

Its No. 1720-RGL air motor jack, a 20-ton capacity all-purpose model, was

recently tested on 90-foot Class 2 power poles, overcoming the dry earth's frictional hold and pulling the poles clear. In the past, some poles have had to be cut off at ground level, reducing the possibility of their later re-use.

As the pole was held erect by a truck-mounted "A" frame, a chain was stretched over a specially-designed lift on the jack's cap and attached to the pole base. Ninety PSI operating pressure required to operate the jack was

Copperweld* Type M Guy Strand offers double economy: 1. lower first cost, 2. lower maintenance costs. Research and new production techniques make it possible for us to manufacture Type M at savings which are passed on to you. The result is Copperweld quality costing you less than before. And the savings don't end after installation. They continue year after year because Type M Guy Strand requires so little maintenance. It will last as long as modern poles.

Seven strengths are available: 2.2M, 4M, 6M, 8M, 10M, 12.5M and 16M. Easy to handle—easy to install, Type M Guy Strand can be readily bent, served, moused or clamped. Write us today for complete information about this new product and its money-saving features.

*Trade Mark

COPPERWELD STEEL COMPANY
WIRE AND CABLE DIVISION *Glassport, Pa.*
For Export: COPPERWELD STEEL INTERNATIONAL COMPANY, New York

New Copperweld TRADE MARK
TYPE M GUY STRAND

2.2M 4M 6M 8M 10M 12.5M 16M

COTTON
Serviceable for all around uses. Standard everywhere.
NYLON
Smooth texture, easy to handle. Preferred for switchboard use.
NEOPRENE
Very popular because easy to keep clean. Moisture and grease proof.

Runzel

CORDS

the WORLD'S FINEST

...for every purpose!
...for every instrument!

Take your choice—Neoprene, Nylon or Cotton. They're all high quality cords made in accordance with Runzel high standard of quality. We carry large stocks of cords to meet every need. Our geographical location means Quick Service.

RUNZEL CORD & WIRE CO.

4723 W. MONTROSE AVE. • CHICAGO 41, ILLINOIS

supplied by the utility company's compressor truck.

The jack is powered by a heavy-duty Ingersoll-Rand rotary air motor, providing an 18 inch lift. It stands 28 inches high, weighs 240 pounds, and can be rolled into position on semi-pneumatic tires. The jack will not lower until the motor is reversed, and automatic shut-offs at top and bottom provide additional safety. Request NP-817.

•

EYEGLASSES FOR NIGHT DRIVING—New yellow-amber glasses designed especially for night driving have been announced by the General Scientific Equipment Co. The glasses, called Glare Bar Night Glasses, have optically correct lenses especially developed to

minimize the fatiguing effects of high-level artificial illumination without reducing over-all visibility.

Comfortable to wear, Glare Bar Night Glasses are available in attractive styles for men and women. Frames are of durable shell plastic, adjustable to the facial contours. Clip-on glasses, designed for use with prescription spectacles, have 14 karat gold-plated frames in the popular drop-eye shape. Request NP818.

Iowa Malleable Iron Makes Executive Appointments

Several new appointments are announced by the Iowa Malleable Iron Co., Fairfield, Ia.

P. L. O'Neill, general manager, has been named executive vice president and general manager of the firm.

Jack Calhoun, formerly with Solar Aircraft Corp., Des Moines, Ia., has been appointed auditor and will assist Wilson Heflin, company treasurer.

Robert K. Eaton joins the sales staff of the Iowa Malleable Iron Co. and The Everstick Anchor Co. Mr. Eaton will assist D. J. White, president of Everstick Anchor Co., a subsidiary of the Iowa Malleable Iron Co.

Other officers of the Iowa Malleable Iron Co. are: W. L. Fry, president, and T. A. Louden, secretary.

Reliable Names A. C. Kelley To Telephone Sales Staff

Reliable Electric Co., Franklin Park, Ill., announces the appointment of Arthur C. Kelley to its telephone sales staff. Mr. Kelley's assignment at Reliable will be in the field of customer service.

A. C. KELLEY

Mr. Kelley started his telephone career with the Farmers Mutual Telephone Co. of Clarinda, Ia., in 1934. He was promoted to plant superintendent in 1946, which position he held until joining Reliable Electric Co. During World War II he saw military service with the U. S. Naval Submarine Forces.

Mr. Kelley has served as chairman of the plant committee of the Iowa Independent Telephone Association and helped set up and conduct various plant schools held at Iowa State College in Ames.

He is also a member and past president of the Tom Griffith Chapter of the Independent Pioneers.

Savings Mean Investment

"History has shown that those countries that have safeguarded the value of their currencies have reaped the benefit of a sustained flow of savings which has enabled them to maintain a high level of investment."—PER JACOBSSON, *managing director, International Monetary Fund.*

Unseen Thief

"Not to understand a treasure's worth till time has stole away the slighted good is cause of half the poverty we feel, and makes the world the wilderness it is."—COWPER.

TELEPHONES IN EDUCATION

Concluded from page 39

practicing with the telephone. This offers some new and rewarding possibilities to speech correction teachers and to all teachers.

Children, in their dramatic play, in their classroom lessons, and in whatever part of the curriculum the telephone appears, find the use of the telephone an opportunity for good, clear and improved speech.

Why shy children and children with speech impediments often are surprisingly improved in speaking over a telephone has not as yet been adequately explained. Some people feel it lends a kind of added stimulus to do better and it arouses in the child new incentives.

Another line of thought is that the telephones seem to bridge the gap between the shy or speech-impeded child and direct speech to a person. Children retarded in their speech often completely overcome their difficulties, by use of the telephone and repeated practice with the telephone assures good results. More research along this line will undoubtedly show other evidence as to why the telephone aids speech improvement.

The possibility of substitution also exists. The telephone may be considered by the shy or speech-impeded child as a substitute for the immediate presence of another person. This is comparable, perhaps, to an actor who does well on radio where there is no feeling of being watched but finds going a bit more difficult on TV before a studio audience or because of the knowledge that the viewers at home can see him.

Whatever the explanation may be, the telephone offers itself as a fine resource material for speech correction activities. Whether real or toy, telephones in the near future may be placed in all speech improvement centers, as ideal pieces of learning equipment.

In whatever way the modern school approaches the subject of the telephone system, the outcome of the study is sure to be better appreciation and understanding and better use of the telephone as well as the wise conclusion that telephones make life more pleasant, convenient and progressive.

The World's A Stage

"Remember that you are but an actor, acting whatever part the Master has ordained. It may be short or it may be long. If he wishes you to represent a poor man, do so heartily; if a cripple, or a magistrate or a private man, in each case act your part with honor." —EPICTETUS.

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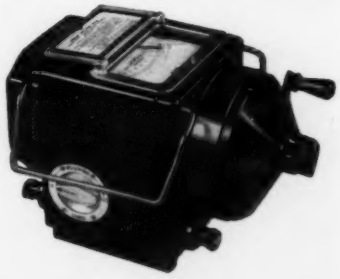

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are the most generally accepted devices in the world for detecting incipient weaknesses in the insulation of nearly all types of electrical equipment.

Pictured here is the Meg type of Megger Insulation Tester—the most popular instrument in our line. Like all Megger Testers it contains its own power supply in the form of a hand generator —no batteries to let you down. This is a 400 v. instrument with a discharge switch.

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BULLETIN 21-45-T

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measure the resistance to earth of ground connections simply, easily and accurately, and thereby help to determine whether such connections will perform the services for which they were designed and installed.

Pictured here is the CVM type of Megger Ground Tester. For complete information on all ranges and types of ground testers write for

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Meter is applicable to pulsating or interrupted D-C as well as A-C supply circuits. Sturdy — no delicate pivots, jewels or moving parts. Remains relatively unaffected by external fields and is independent of load, power factor or phase shifts in supply circuit. Available in switchboard, miniature and portable types. Model illustrated is used for checking bell-ringers.

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NEW DEVELOPMENTS IN TELEPHONY

Continued from page 26

The auger bar and pole derrick are raised from traveling to working positions by power. It is a complete earth-boring machine, integrally assembled with engine, clutch and transmission. A new exclusive capstan winch takes power directly from the transmission. All speeds of transmission are utilized. Optional hydraulic controls are available for easier and faster operation.

Fig. 42. Skid-mounted earth boring machine.

Two models of this earth boring machine are available. One model digs holes from 9 to 20 inches in diameter. The other from 9 to 36 inches in diameter and up to 10 feet deep.

•

Spotter-Base Earth Boring Machine (Fig. 43). When the spotter-base is used in conjunction with the skid-mounted earth boring machine units, it permits holes to be dug in an 80-inch arc across the rear of the truck chassis. This unit saves considerable time and maneuvering in spotting the auger over the hole location.

In addition to operating in an 80-inch arc, it also extends 22 inches fore and aft—adding further to the ease of spotting the auger. The fore-and-aft movement, as well as the movement in the 80-inch arc, is accomplished by the use of hydraulic rams. The unit can be operated anywhere within the arc and also anywhere within the 22-inch area.

•

Hydraulic Operated Derricks (Fig. 44). Recently developed hydraulic operated derricks are proving particularly adapted to telephone pole line construction and maintenance. They may be mounted on new or existing trucks with open or closed bodies and on the front or rear.

This particular derrick has two straight, oversized steel tube side legs, without hinges or joints, which are pin-connected to a standard roller-head sheave of the middle leg to form a simple tripod.

The derrick is carried assembled and threaded up flat, barely above the truck body and is erected for use or stowed away in 30 seconds. A single lever valve near the base of the derrick controls the single hydraulic cylinder to erect, operate or stow the derrick.

The normal operating range of the derrick is from 2 feet above the ground to 4 feet past vertical over the truck body, 115 degrees, or more. It provides a live boom, up or down, under loads up to 8,000 pounds and 20 feet above the ground for one model, and

Fig. 43. Spotter-base earth boring machine.

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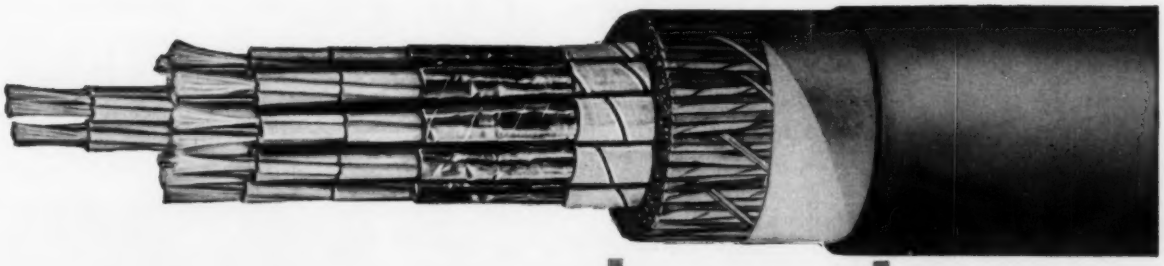
VIDEO PAIR CABLES?

General Cable, *alone* among the independent cable manufacturers is producing cable of this new and improved design. Why? To help you *now*, under your current expansion programs, get ready for the mass of technical, recreational, educational and specialized data of all kinds that will have to be carried over public communication systems.

General Cable video pairs may be had combined with any type of telephone cable construction, or as pairs alone, properly sheathed for whatever type of installation you may require. Contact your nearby General Cable representative. It will pay you to be ready today for tomorrow's new business.



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- *Low signal to noise ratio
- *Low attenuation
- *Low shield resistance
- *Low noise and cross talk levels
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Telephone circuits.

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for aerial or duct installation

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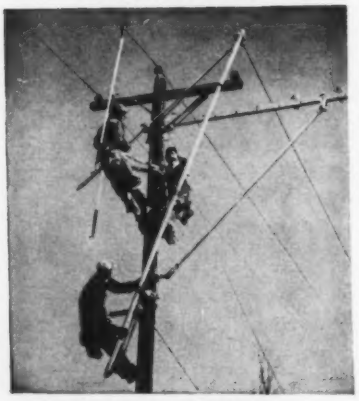

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Fig. 44. Hydraulic operated derrick.

10,000 pounds and 23 feet height for the other model now available. These heights permit setting 40 and 55-foot poles.

Capacity loads may be picked up back of the truck, hoisted with the winch and simultaneously swung forward to lower well into the truck body.

Another feature of this derrick is the ability to pull poles hydraulically, without winch line pull. The pole pulling capacity is 9,000 pounds for 8-foot direct stroke or 18,000 pounds for a 4-foot lift. Conversion to pole pulling can be accomplished in a minute without tools.

Farm Housewife Helps Probe Mysteries of Long Range Radio

BETWEEN the morning milking and the evening chores, life on the farm takes a scientific turn for Mrs. Orton Newton of Pharsalia, N. Y.

Orah Newton, a homey, 59-year-old housewife, holds a restricted radiotelephone operator permit and operates three radio transmitters almost daily. She still manages to tend house for her son and husband and lend a hand with 50 head of dairy cattle.

A former school teacher, Mrs. Newton got into the "science business" three years ago when research men at Bell Telephone Laboratories determined to learn more of what happened in over-the-horizon transmission of microwave radio frequencies.

Near grazing cows and tall corn, the radio researchers erected a 28-foot antenna, a 10-foot antenna and a radio building on a hilltop. Life hasn't been quite the same for the Newton family ever since.

"Folks come from miles around every Sunday to see the antenna," Mrs. Newton says. The sightseeing requires about a half-mile drive from the Newton homestead up a winding, gravel road to the antenna.

Mrs. Newton is proud of her part in the research project. "It's mighty interesting, even though I don't know all there is to it," Mrs. Newton says. "I'm glad to help out and I know its going

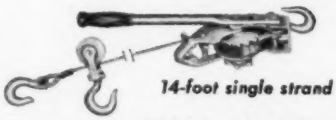
From her dining room, Mrs. Newton dials instructions to three radio transmitters elsewhere on the farm, switching the transmitters "on" for sending.

ACCO Quality

Wright Type "R" PULL-A-WAY

Write for Bulletin DH-521A

5-foot double strand 3000-lb. pull



14-foot single strand 1500-lb. pull

Weigh less than 9 pounds

Sturdy • Light • Safe • Economical

Here are some of the fine features of WRIGHT Type "R" Pull-A-Way: Drop forged ductile aluminum alloy frame • Wire hoist cable of maximum strength and flexibility • 8" minimum handle movement—for close hook-ups • 2" drum hub for cable • No oiling needed • Drop forged steel hooks • Removable, reversible "Safety Handle" that bends before any part of hoist is overloaded • Automatic load lowering, with positive control for safety • No slipping brakes • Low first cost • Simple, rugged repair parts easy to install ...factory service never required.

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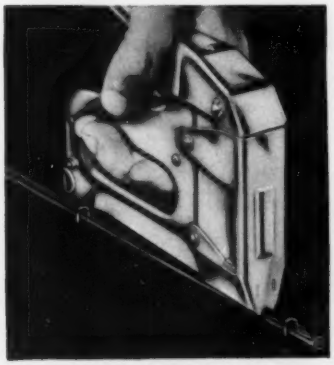
For Wire Up To ¼" in Diameter . . . Bell, Thermostat, Radiant Heat, Telephone, Inter-com, Burglar Alarm, etc.



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SAFE!

Can't damage wire because staples automatically stop at right height! Won't even break ¼" hollow glass tubing.

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Proved by test 6 times faster than old hammer method. Saves you 70% in fatigue and efficiency . . . saves many dollars a year.

HOLDS!

New staples get tremendous holding power from tack points that spread to lock themselves into wood!

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fits either hand brace or power drill

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Cut off taper and use "hex" shank in both power drills and hand braces

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***All Irwin Adapter Shank Wood Bits** are forged in one piece from special steel and heat tempered full length for longer life. Plastic coating on balanced cutting heads guarantees factory-fresh sharpness, unequalled performance. Widely used by utilities, electricians and construction workers.*

IRWIN auger bits • screw drivers

Wilmington, Ohio

Mrs. Orton Newton of Pharsalia, N. Y., with her pasture-full of microwave radio equipment on the Newton farm.

to be of great use to telephone and radio transmission."

Dr. Wolfgang Kummer, Bell laboratories scientist at Holmdel, N. J., says Mrs. Newton's work not only has been highly useful, but "essential in helping us fathom why over-the-horizon transmission works."

Each day, Dr. Kummer, or one of his associates, telephones Mrs. Newton and designates which transmitters are to be operated, and at what time. Adjoining Mrs. Newton's telephone is a special dial, exactly like that on a telephone.

By dialing combinations of numbers, she activates the proper transmitters, beaming microwave radio signals to be received by a 60-foot antenna at the Bell laboratories research center at Holmdel, 171 airline miles away.

The new system of radio transmission began when a Bell laboratories engineer became intrigued with the strange phenomenon that radio waves take off in a giant stride to antennas beyond the horizon. The phenomenon had been studied here and abroad, but no practical use was seen until Kenneth Bullington of Bell laboratories predicted it could be used for dependable communications.

Mr. Bullington and his associates confirmed the prediction experimentally and over-the-horizon transmission was born. But the "why" of how it worked was not fully understood.

In the usual line-of-sight radio transmission, signals travel in a straight line between the transmitter and the receiver; a distance limited for practical purposes to about 30 miles due to the curvature of the earth, except in mountainous regions.

In beyond-the-horizon propagation, the transmitter and the receiver do not "see" each other because of that curvature. The antenna sends its signal into the atmosphere and the receiving antenna picks up the weak energy scattered by the atmosphere.

The transmitting antenna may be thought of as a giant "searchlight" aimed at the sky. Although the source is not visible, the receiver antenna "sees" the light from the beam, though faintly because of the scattering of the energy by clouds, haze or rain.

It was known that the atmosphere into which the "searchlight" signal was pointed contains scattering or reflecting surfaces, which are created by changes in temperature, humidity and wind. However, this "scattered" radio signal could be made useful by using

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high powered transmitters, large antennas and sensitive receivers.

To permit lengthy testing, the transmitters were installed on the Newton farm hilltop about 1,800 feet above sea level. The Newton hill was chosen because it is on direct line with Bell laboratories centers at Holmdel and Murray Hill, N. J., was an adequate distance from Holmdel and provided a clear sending path to the area.

The transmitter and antenna have become almost as widely known in Chenango County as the Newton family, whose popularity springs from lifetime residence in Pharsalia Township, except for the years Mrs. Newton taught school in Endicott and Jamestown, N. Y., before her marriage.

Orah and Orton Newton are active in community affairs, and Orah has been teaching Sunday school at the Pharsalia Methodist Church "for more years," she says, "than I want to count."

For six years, Orton was a supervisor of the town of Pharsalia. This is a elective office which includes the duties of administration of all town offices, and the supervisor automatically is a member of the Chenango County Board of Supervisors. While on the board, Orton served on the highway, soil conservation and agriculture committees.

The farm is as widely known as the Newtons. The initial lands were purchased by Daniel Newton in 1809, and the farm has since grown to its present size of 271 acres. Since the original purchase, five generations of Newtons have done the spring plowing and the before sun-up milking. The Newton's son, 25-year old Harold, is continuing the tradition.

In 1952, the Agricultural Society of New York State honored the Newtons by choosing their farm as one of the "Century Farms" to be cited by Gov. Thomas E. Dewey at the organization's annual meeting. Century Farms are chosen by proof of ownership in the same family for 100 years or more.

In that century, the Newtons have had a goodly supply of farmers, but only one science research assistant.

Mrs. Newton's work has helped in a broader understanding of over-the-horizon microwave transmission, now a reality in the DEW line radar fence in the Arctic, the similar White Alice project in Alaska, and the Florida-to-Cuba microwave link opened in September, 1957.

Lasting Value

"That which astonishes, astonishes once; but whatever is admirable becomes more and more admired."—JOUBERT.

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Long Arm plus pulley for greater leverage. Light and easy to handle. Capacity 1" green wood. Choice of solid poles (8' to 12') or jointed poles (8' to 16').

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THE FAMOUS FORESTER HEAVY DUTY BRUSH CUTTER
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See them all in the Porter Catalog. Write for it today.

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Somerville 43, Massachusetts

Together for discussion of plans to manufacture wire and cable in Venezuela, are (left to right): Sir John Dean, chairman, Telegraph Construction & Maintenance Co. Ltd., Great Britain; C. F. O'Neil, vice president, General Tire & Rubber Co.; J. R. MacDonald, chairman and president, General Cable Corp.; Virginio Tedeschi, president, CEAT, Italy; W. H. McFadzean, chairman, British Insulated Callender's Cables Ltd., Great Britain.

Announce Plans to Make Wire, Cable in Venezuela

J. R. MacDonald, chairman and president of General Cable Corp., and C. F. O'Neil, vice president in charge of foreign operations of General Tire & Rubber Co., announced that British Insulated Callender's Cables Limited and the Telegraph Construction & Maintenance Co., Limited, both of Great Britain, will become major shareholders in Cables Electricos de Venezuela C.A., the new name of a corporation formed in Venezuela in 1957 as Ceat General Industria Nacional de Cables Electricos y Telefonicos C.A. The other major shareholder is CEAT of Italy. Shares will also be held by business interests in Venezuela.

The major shareholders have agreed to increase the capital of the company from Bs.12,000,000 to Bs.17,000,000. Any further finance immediately required, it is anticipated, will be borrowed from Venezuelan sources.

Cables Electricos de Venezuela will manufacture in Venezuela a broad line of electrical and telecommunication wires and cables to meet the growing demand for these products in Venezuela. According to present estimates, production will begin during the Spring of this year at a factory presently under construction in Valencia, Venezuela. The machinery and equip-

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ment, all of which has been purchased, will be installed as soon as construction has been completed.

The initial plant which was originally scheduled to have approximately 80,000 square feet of floor area has been enlarged to approximately 120,000 square feet. It is located on a plot of land of about 40 acres which is sufficiently large to enable the company to expand its operations as the need develops.

It Can Happen Here

"I came back from a 7,000 mile motor tour of Europe more convinced than ever that people who say it can't happen here should beware of increasing government regulation of our economy. Socialism in Europe is working tragically bad."—EDWARD W. HIESTAND, *U. S. Representative from California.*

Can Handicap Growth

"It is highly important that we not lose sight of the significant role that savings play in providing the capital for the long-term expansion and growth of the nation's productive equipment. Without adequate saving, we may severly handicap the growth of the American economy or we may even eventually bring economic growth temporarily to a halt."—HOMER J. LIVINGSTON, *president, First National Bank of Chicago.*

Obituary

FREDERICK PFAENDER of New Ulm, Minn., 94, chairman of the board of the New Ulm Rural Telephone Co., died on Jan. 29 following a short illness.

Mr. Pfaender, father of W. J. Pfaender, manager of the Chicago branch of Stromberg-Carlson Co., was one of the organizers of the New Ulm Rural Telephone Co. in 1905. He

served as its first secretary and was president of the company from 1908 until May 1957 when he was elected board chairman.

Mr. Pfaender was born on Oct. 8, 1863 at Fort Ridgely, Minn., which at that time was under the command of his father, Col. William Pfaender. Following short residences at Fort Ridgely, Milford, and St. Paul, Minn., the Pfaenders moved to New Ulm where Frederick received his public school education. Later he took a course in higher accountancy from LaSalle Extension University of Chicago.

In addition to his telephone work, Mr. Pfaender had been in the insurance business since 1924. Previously he also had been in the insurance business with his father from 1882 to 1892.

Mr. Pfaender was active in many civic affairs, one of which was the New Ulm volunteer fire department which he helped organize in 1887 and served as assistant chief or chief for many years.

He was one of the organizers of the Minnesota Volunteer Firemen's Benefit Association, a group now having over 10,000 members, in 1926 and was its first president and its secretary from 1930 until his death.

Mr. Pfaender was active in the affairs of the Minnesota Telephone Association. He was a director of the

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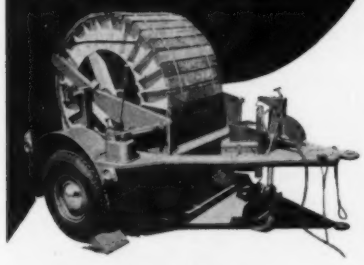
WIRE CARRIER



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HOLLOW WALL ANCHOR

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SMALLEST SIZE HOLE of any hollow wall anchor
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STRONG, ONE-PIECE, triped design
EASY TO INSTALL, no special tools required
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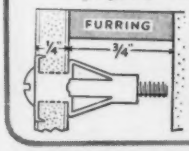

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for Years-
and Years-
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association for several years and served as its president in 1948-49.

In addition to his son, W. J., Mr. Pfaender is survived by two sons, Walter C. of Washington, D. C., and Armin J. of Berkeley, Cal., and a daughter, Mrs. Therese C. Ostrander of Albert Lea, Minn.

Finnish Executive Studies U. S. Telephone Industry

Production of Ansonia Ankoseal cables manufactured by Ansonia Wire & Cable Co. of Ashton, R. I., is one phase of the American telephone industry singled out for study by Leo P. J. Toivonen, general manager of the Finnish Telephone Association, in his current tour of the United States. Mr. Toivonen is participating in the Foreign Leaders Program of the International Education Exchange Service of the U. S. Department of State.

Besides acting as executive director of the association of Finnish private telephone companies, Mr. Toivonen edits the group's publication, lectures to technicians on the field of telephony, and has authored numerous technical articles.

His American tour is planned to concentrate on such aspects of the telephone industry as research, organization, administration, equipment, production methods, and publications.

Automation is of special interest to his associates in the Finnish telephone industry, Mr. Toivonen informed his hosts at Ansonia, inasmuch as the Association of Private Telephone Companies vigorously supports its member companies in a continuing drive for modernized operation.

Long-term objective of the association, Mr. Toivonen states, is to centralize telephone operations. Since 1948 the number of independent private telephone companies in Finland has been reduced from nearly 700 to somewhat more than 400, with the desired goal a reduction to 50 or less. The individual private Finnish telephone companies are cooperatives, owned by their subscribers.

Reports on original Ansonia research in development of plastic-covered wire and cable gave Mr. Toivonen an extensive "fill-in" on American approaches to operating problems equivalent to those encountered by the Finnish telephone companies.

Halline Company to Build Larger Headquarters Plant

Construction of a larger headquarters plant for Halline Equipment Co., Portland, Ore., manufacturer of heavy-duty utility pole-hole diggers, derricks, and ladders, will begin this month in Portland.

Thomas R. Hall, who with his father founded the firm as the American Truck Equipment Co. at the present Swan Island quarters, which are now too small, reported the new building will provide 20,000 square feet of floor space.

The 200-by-100-foot structure will be located on a 3½-acre tract which will permit future expansion, Mr. Hall reported. The quarters will have two working bays for the manufacture of the Halline utility equipment, a parts warehouse, and offices.

Halline has just introduced a new design hole-digger, marketed as the Hall Earth Borer, which is powered by the largest capacity hydraulic motor available, Mr. Hall stated.

Stromberg Holds Seminars At Annual Sales Meeting

More than 80 members of the Stromberg-Carlson Telecommunication sales department have completed one of the largest, most intensive and unique seminar-type sales meetings in the company's history, according to T. C. Thompson, telecommunication general sales manager, who was in charge of the meeting. Stromberg-Carlson is a division of General Dynamics Corp.

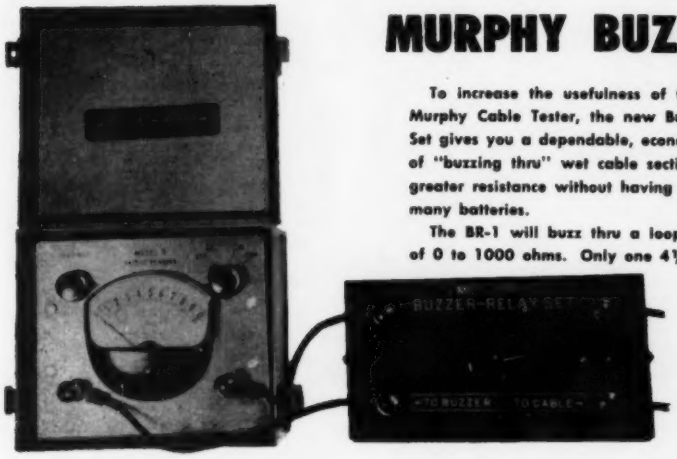
The meeting, held in Rochester from Jan. 13 through 16, consisted of discussions on all phases of the company's operations in the telecommunication industry, including introduction of the new Stromberg-Carlson wall telephone in addition to the company's full line of switchboard and related equipment, carrier-microwave equipment and supply items.

"The free flow of information derived from the discussions," Thompson relates, "proved helpful in gaining insight into the problems and needs of our customers as well as aiding our men in answering many questions which arise in the field."

Attending the annual sales meeting were branch sales managers, sales representatives and sales engineers from the territories served by branch offices in Atlanta, Ga.; Chicago, Ill.; Kansas City, Mo.; Rochester, N. Y.; and San Francisco, Cal., in addition to telecommunication personnel from the main office.

Except for opening and closing remarks by top management personnel, the first three days of the meeting included seminar-type discussions in which new and pertinent information on each product line was presented and fully discussed in a round-robin manner, by approximately one-third of the

NOW YOU CAN BUZZ THROUGH WET CABLE SECTIONS AND NOT HAVE TO TEST FROM FIELD AND OFFICE ENDS



MURPHY BUZZER RELAY SET (BR-1)

To increase the usefulness of the famous Murphy Cable Tester, the new Buzzer Relay Set gives you a dependable, economical way of "buzzing thru" wet cable sections over a greater resistance without having to add too many batteries.

The BR-1 will buzz thru a loop resistance of 0 to 1000 ohms. Only one 4½ volt battery is used in the set and it is enclosed in a cabinet with a special "balanced armature" relay. Dimensions of the Murphy Buzzer Relay Set are 3½x6x3 inches. It is shipped complete with a pair of water proof cords for connecting to the Murphy Cable Tester, and a heavy duty 4½ volt battery.

Write for prices and additional information.

Order your new Model VC Test Cords for use with Murphy Cable Tester. Made of high quality, extremely flexible, test wire, they're insulation tested at 20,000 volts . . . assure no "leakage" readings.

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LOOK TO LINDSAY

THE LINDSAY TELEPHONE SUPPLY CO., *Est. 1939*
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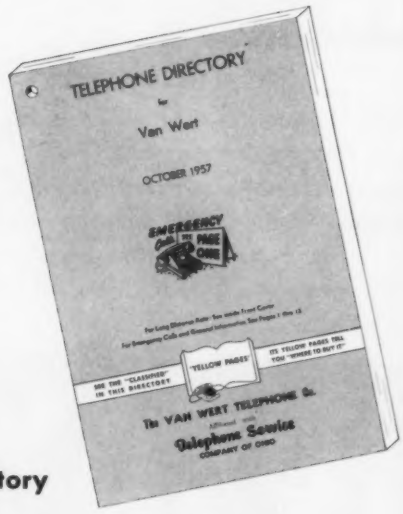
View of the more than 80 in Stromberg-Carlson's Telecommunications sales department who attended the company's seminar-type annual sales meeting in Rochester, N. Y.

entire group each day. Each discussion group was led by telecommunication sales and engineering personnel.

The final day of the meeting included a review of 1957, company aims for 1958 and a tour of up-to-date manufacturing areas and the new administration building.

Among those taking part in the sales meeting in addition to Mr. Thompson were: Gordon G. Hoit, executive vice president; P. J. Lucier, assistant treasurer and manager of Telephone Finance Department; G. W. Schomaker, assistant manager, Telephone Finance; and from the Telecommunication Division: John H. Voss, vice president; W. A. Rockwood, assistant general manager; Colby Knapp, assistant sales manager; F. A. Morris, director of research; R. W. Jones, systems planning director, engineering; F. W. Haupt, advertising manager; R. P. Weis, assistant advertising manager.



A Directory for The Van Wert Telephone Co.

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The American POWER-PULL was designed with efficiency in mind. This combination hoist and puller is built to take the strain and pressure that line work demands, performing "stretch and pull" jobs quickly with far less effort.
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125 Bayard St., Dayton 1, Ohio — U.S.A.

U. S. I. Chemicals Names Sales, Production Assistants

John K. Moffett Jr. of U. S. Industrial Chemicals Co., a division of National Distillers & Chemical Corp., has been appointed assistant manager of Petrothene® polyethylene sales.

The announcement was made by A. R. Ludlow Jr., sales vice president.

J. K. MOFFETT JR.

Mr. Moffett graduated in 1948 from Yale University and has been employed since then by U. S. I.

He was supervisor of the company's sodium peroxide plant, head of sodium peroxide sales and at the time of his new appointment Mr. Moffett was in a sales development position for Petrothene polyethylene resins.

Mr. Moffett also served over four years as an enlisted man and officer in the United States Marine Corps.

•

In another assignment, U. S. Industrial Chemical Co. named William H. Rader assistant production manager for Petrothene polyethylene resins.

The appointment was announced by Robert H. Cornwell, vice president in charge of production.

Mr. Rader was employed from 1941 to 1943 by a consulting firm as a naval architect.

In 1943 he enlisted in the United States Navy and was assigned to ship repair, salvage, and underwater work.

Upon completing his military service in 1946, Mr. Rader resumed studies at the Illinois Institute of Technology and received a B. S. in Chemical Engineering in 1948.

He was hired in 1948 by the chemical products division of Esso Standard Oil Co. He remained with them until 1953, when he joined National Distillers'

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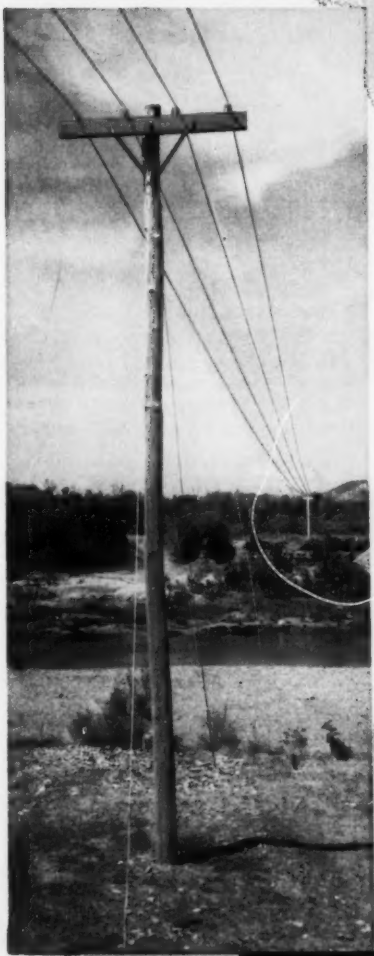
The NEW LOWER Resistance Extra-High Tensile Line Wire



- Better Voice Transmission
- Spans to 600 Feet or More
- Savings in Material and Labor
- Lower Ultimate Costs

Superior voice transmission qualities and extra high physical strength are combined in **Crapo** HTL-195 to provide the most practical and economical of conductors for rural telephone circuits.

This new, lower-resistance steel line wire, with a minimum breaking strength of 1800 pounds, makes possible spans to 600 feet in Heavy Loading, 650 feet in Medium Loading and 700 feet in Light Loading areas. Where terrain and other conditions permit the use of extra long spans, this means a 40% reduction in pole structures. The savings in materials and in construction costs will be apparent.

Before building new, or replacing old rural lines, investigate the possibilities of **Crapo** HTL-195! Write for complete information, including Manual of Engineering Data, No. A-195!

Pioneers in the development of high tensile and extra-high tensile steel line wire, and associated products, for the telephone industry.

STEEL & WIRE COMPANY, INC.
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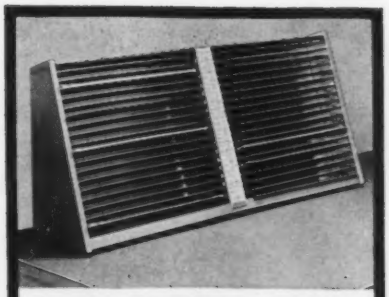


Trouble Recorder Card Rack

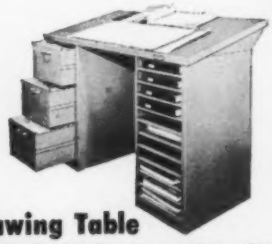
For fast orderly sorting of Trouble-Recorder cards, has 38 card slots in two banks with index strip between. Base is 38" by 8". Height 15". No. D30225-1.

Telephone Office Equipment

to lighten your work and improve efficiency

Work Bench

For repair, assembly, test and paper work. Top drawer divided into 24 compartments for parts and tools. Large file drawers are for circuit drawings. 54" x 25" top covered with masonite. Height 36". Drawers may be inserted from back to reverse position of kneehole. No. D29978-3.



Drawing Table

For circuit drawing in crossbar offices, provides central location for reference material. Masonite top is 30" x 60". Height 36" at front, 42" at rear. Three large file drawers at left for drawings. Eleven shelves at right are 2½" high, 14" wide, 18" deep for sketches, sequence charts, book type SD sheets, trunk serials, etc. No. D30326-1.

Color of all units: Baked-on gray enamel unless otherwise specified.

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W. H. RADER

subsidiary, National Petro-Chemicals Corp., as senior technologist.

Mr. Rader has performed customer service work, and, as senior development engineer, had charge of polyethylene development operations at the company's Tuscola plant.

Mr. Rader is a member of the American Institute of Chemical Engineers, the American Chemical Society, and the Society of Plastic Engineers.

Philco Appoints Nisbet Computer Sales Manager

John M. Nisbet has joined Philco Corp.'s government and industrial division as sales manager of the "Transac" computer department. Making this announcement on Jan. 30, H. E.

J. M. NISBET

Taylor Jr., marketing manager for industrial products, stated that Mr. Nisbet would have complete responsibility for all computer sales.

He also said that Philco would deliver the first two of its new, transistorized "Transac" S-2000 large scale computers this year.

For the past several years, Mr. Nisbet has been a sales representative for the electrodata division of Burroughs Corp. Prior to that, he spent six years with the Addressograph-Multigraph Corp.

Mr. Nisbet received his B.S. degree in Commerce at the University of North Carolina and he served in the United States Navy with the rank of lieutenant commander.

Bread and Circuses

"It is hard for the historian not to draw a parallel between us and the Romans. The couch of ease and entertainment slowly cut the ground from under that empire. History has a way of repeating itself. We don't believe we want it to do so at our expense. But the price to prevent it is going to be high . . . we are going to have to realize that football scholarships and a hundred thousand fans in stadiums; the biggest consumption of liquor and cosmetics in the world; the drive for a four day week, and some more of our luxuries are a little beside the point when there is a possibility that we can lose the whole kit and kiboodle because we are too occupied with bread and circuses."—*Reynoldville (Pa.) Star.*

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Cascade Pole Co., P.O. Box 743, Tacoma, Wash.—Creosoted Douglas Fir and Cedar Poles.

C. M. Christiansen Co.—Northern White Cedar Poles, Pentachlorophenol treated. Plant and Yards, Phelps, Wis.

Dierks Forests, Inc. (formerly Dierks Lumber & Coal Co.) Wood Preserving Division, 810 Whittington Ave., Hot Springs, Arkansas. Southern Pine select poles, all sizes and lengths, creosote and penta-pressure treated. Prompt shipment.

Eppinger & Russell Co., 80—8th Avenue, New York 11, N. Y.—Creosoted Poles and Cross Arms. Plants: Jacksonville, Fla., Norfolk, Va., Eddington, Pa.

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CABLE SPLICERS, Station Installers, Equipment Installers, Linemen. Experienced men needed. Steady work, good pay. Henkels & McCoy, 1211 Kenmore Avenue, Elkhart, Indiana, or 6100 N. 20th St., Philadelphia, Pa.

PLANT ENGINEERS for large Independent Telephone Company. Some experience necessary. In reply state age, educational and employment history. Address reply to Personnel Supervisor, Rochester Telephone Corporation, 10 Franklin Street, Rochester 4, N. Y.

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Excellent opportunity available with a fast growing Southern California Independent telephone company. Job requires a man who is capable of developing inter-company settlements, preparation of tariff filings and rates and charges for telephone service. Submit complete résumé of experience, training, education, and salary requirements, including references and recent photograph to Box No. 4057, c/o TELEPHONY.

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TELEPHONE EXCHANGE IN SOUTHWEST. Write Box No. 4043, c/o TELEPHONY.

WANTED—RETIRED TELEPHONES AND ACCESSORIES, any quantities and makes. Bohnsack Equipment Co., Germantown, N. Y.

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WE CONVERT 901 LEICH SETS TO 601 WITH DIAL, S.C. 1248 or 1258 to S.C. 1243 with dial. Write for prices. We are also interested in outright purchases of Leich 901 sets and S.C. 1248, and parts. Telephone Engineering Co., Simpson, Pa.

COULD USE TEMPORARILY A UNIVERSAL switchboard (Kellogg or Stromberg-Carlson type) used. At least 120 line equipt. Have 24 volt battery. Give price, features, age condition, dimensions, cable, and location. LeClaire and Princeton Telephone Exchanges, Inc., Princeton, Iowa.

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INTERESTED PURCHASE COMPANY about 1000 stations New York, New Jersey, New England. Probably retain present personnel. Reply confidential. Write Box No. 4062, c/o TELEPHONY.

TELEPHONES—all types—any condition; candlesticks, wall sets, etc. Write advising quantities available. Our truck will pick up. Reply to Box No. 3952, c/o TELEPHONY.

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CASH AVAILABLE for common and preferred stocks or bonds of telephone operating companies. Write Box No. 4050, c/o TELEPHONY.

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Handy, practical. Dielectric black plastic barrel and cap permits working safely on "live" contacts. 4¼" long x ⅜" diameter.
No. CB-5—with 6—.007" thick blades $3.80
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Reservoir for extra blades.
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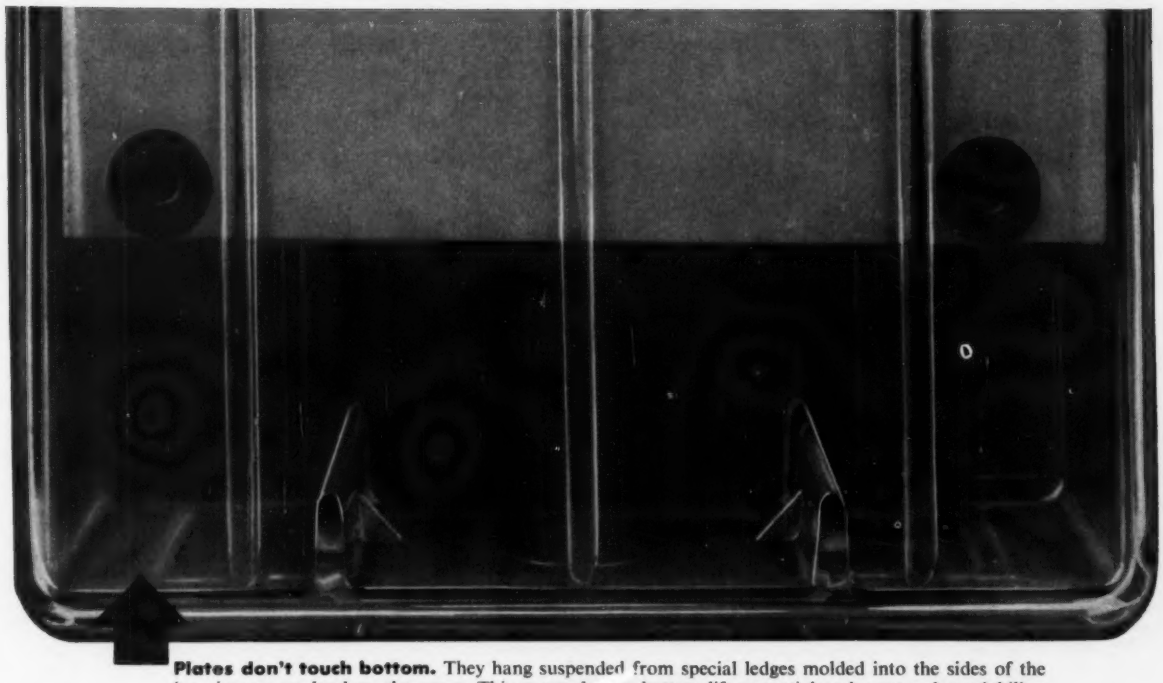

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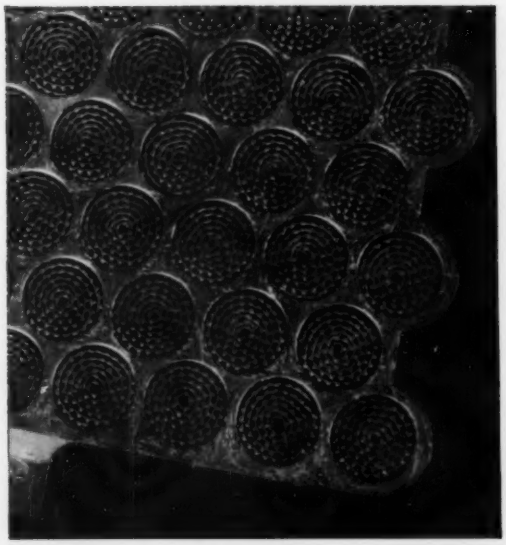

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